

THE KANSAS INDUSTRIALIST

Volume 43

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Number 1

MACHINE PRICES GO UP

FARMERS ARE URGED TO PUT IN ORDERS NOW

Because of Lack of Steel, Some Implements Are Not Being Manufactured—Motor Cars Solve Power as Well as Transportation Problems

Kansas farmers who will require machinery within the next six or eight months should put in their orders now, or run the risk of paying increased prices or of not being able to purchase at any price. This is the advice of F. A. Wirt, instructor in charge of the department of farm machinery in the Kansas State Agricultural college.

Conditions have changed since last spring when Mr. Wirt advised farmers to buy machinery because of the prospective advances in prices. Due to lack of steel in many forms, companies have been compelled to discontinue the manufacture of certain machines, and consequently branch houses in Kansas City and elsewhere are not carrying some of the important machines required by farmers.

FAR BEHIND WITH ORDERS

"The prices are not likely to come down even should the war come to a close tomorrow," says Mr. Wirt. "Steel companies are so far behind in supplying the demand for their products that it would be many months before prices would be affected."

"Dealers in Kansas—at least a majority of them—have not raised prices so rapidly as the manufacturers have been compelled to raise them. Many of these dealers are selling machines at the prices they will have to pay the manufacturers when the machines in stock are duplicated. In consideration of this condition, farmers probably can make a substantial saving by buying now."

AUTOMOBILE FOR POWER

Because of various attachments now on the market the farmer's automobile can not only be used as a solution of some of the rural transportation problems, but also as a useful and convenient power plant, points out Mr. Wirt.

"The purchase of a trailer makes possible the transporting of milk, cream, garden truck, and even chickens to market," says Mr. Wirt. "The trailers, which are of various designs, are manufactured by more than a dozen companies. The engine of the average automobile is seldom worked to capacity and consequently there is plenty of power to take care of the light trailer."

ATTACHMENTS COST LITTLE

Attachments are now being manufactured, at a low price, which will transform several of the more popular makes of cars into power plants. A series of gears and shafting has been devised which operates a pulley on the front of the car, and makes it possible to turn farm machinery.

One of the smaller cars most popular on the market will develop about 12 horsepower on the brake, and is consequently more than strong enough for the average work required of a farm engine. Most farmers use a gas engine of five or six horsepower.

DRIVE SEVERAL MACHINES AT ONCE

It is not economical to use a 12-horsepower engine for furnishing power to a washing machine or a pump. It is best to have a system of shafting which can be arranged to drive several pieces of machinery simultaneously. Corn shellers, feed grinders, fanning mills, and other small pieces of farm machinery can be connected with the system of shafting.

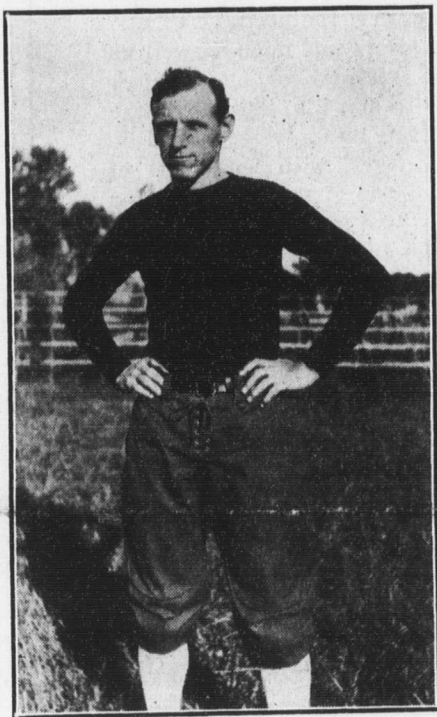
"If there is a small electric power plant with storage batteries on the farm the automobile engine can be made effective in charging the batteries at times when the car is not in other use," comments Mr. Wirt, "but it would not be economical to use the

car's engine to store electrical energy in the battery, and then use the electricity to drive small individual motors attached to the smaller pieces of machinery, except the washing machine, sewing machine, and the like. The overhead charges are too heavy. Judgment should be exercised in utilizing the automobile as a power plant or a loss of efficiency will result."

AGGIES LOOK FOR HARD GAME WITH BAKER TEAM

Baldwin Men Are Nearly All Veterans—Eight Games on Local Schedule—Kentuckian Coaches Freshmen

Aggie camp followers are impatiently awaiting the opening of the local football season. The opening game with Baker on Ahearn field next Saturday will not be an easy one. Coach Schladerman has had his team hard at work for several weeks and the gang from Baldwin will put up a scrappy contest. The presence of practically a whole team of veterans in the game



COACH CLEVINGER

from Baker, will go a long way toward making the Aggies go their best in order to start out the season with a clean slate.

Herschel Scott, fellow in soils, is assisting with the freshman team. He played three years on the University of Kentucky team and was captain one year.

Eight games are booked on the 1916 football schedule. The big event of the season will be the second annual Home-coming day, November 11, when the Missouri Tigers will be the attraction. It is expected that hundreds of former students will be in attendance.

Following is the schedule: Baker university at Manhattan, September 30; Southwestern college at Manhattan, October 6; University of Nebraska at Lincoln, October 14; Kansas State Normal school at Manhattan, October 21; University of Kansas at Lawrence, October 28; University of Missouri at Manhattan, November 11; University of Oklahoma at Norman, November 18; Washburn college at Manhattan, November 30.

ENGINEERING ENROLMENT SHOWS 30 PER CENT GAIN

Will Overcome Loss of Upper Classmen Now at Work

A gain of somewhat more than 30 per cent in enrolment of engineering freshmen is shown by the registration figures this fall. This will overcome the loss caused by the withdrawal of about 50 upper classmen, who obtained remunerative positions in manufacturing plants this summer and expect to retain them for the coming year.

FACULTY MEMBERS STAY

ONLY ONE CHANGE IN HEADSHIP OF DEPARTMENT

Z. G. Clevenger Becomes Professor of Physical Training and Director of Athletics—Usual Number of New Men and Women as Instructors

For the first time in a number of years, only one college department is this year under the headship of a new professor. The changes in subordinate officers of the institution are about the same in number as usual.

The professorship of physical education, carrying with it the direction of athletics, was the only vacancy in a department headship this summer. It was filled by the election of Z. G. Clevenger, director of athletics and head coach in the University of Tennessee, whose teams had won the southern championship in football, basketball, and baseball.

INDIANA'S GREATEST ATHLETE

Mr. Clevenger was a student in Indiana university from 1900 to 1904, during all of which period he was short stop on the baseball team and half-back on the football team. In his last year, he was captain of both teams. He played basketball in his last college year—the first in which the game was carried on in Indiana.

For three years Mr. Clevenger was named on the All Indiana baseball and football teams, for two years on the All Western baseball team, and for one year on the All Western football team. Just this year Indiana university voted him to have been the greatest all round athlete ever enrolled there.

For two years following his graduation, Mr. Clevenger was assistant director and general manager of athletics for his institution. He assisted in football coaching and was head coach of baseball and basketball.

HAS COACHED WINNING TEAMS

The new Kansas coach is not unfamiliar with Missouri Valley conditions. For four years he was professor of physical education and director of athletics in Nebraska Wesleyan university. His team defeated the University of Nebraska in basketball and his baseball team won a majority of the games with the big university. In basketball his team defeated Ames two out of three years. At that time Nebraska Wesleyan was not playing Missouri Valley teams in football.

Beginning in 1911, Mr. Clevenger was athletic director and head coach of the University of Tennessee. Under his direction the football team steadily improved until it won the southern championship over teams fully the equal of those in the Missouri Valley. In basketball Tennessee lost but four games in the last three years and no games in the past year. It also won a big majority of the baseball games in the last three years. In the past year the entire team hit above .300.

Mr. Clevenger has, in addition to his work as a coach, had five years of experience in professional baseball and is a graduate of the Chautauqua School for Physical Directors and of the University of Illinois school of athletic coaches.

MICHIGAN STAR TO COACH

Kansas athletics have been further assisted by the appointment of Adolph ("Germany") Schultz, famous all-America center and former star of the University of Michigan team, as assistant professor of physical education and assistant coach.

"Germany" Schultz played four years on the University of Michigan team—1904, 1905, 1907, and 1908—and has been line coach at that institution the last three seasons. He was captain of the team in 1908. He was line coach at the University of Wisconsin in 1911 and 1912. Wisconsin won the

conference championship in 1912, it will be recalled.

Mr. Schultz was all-America center in 1907, was second in 1908, and was all-time center in 1909. He comes from Fort Wayne, Ind.

This athlete is powerful in build, being six feet three inches in height and tipping the scales at nearly 250 pounds.

HERE'S LIST OF NEW ONES

The list of new members of the college staff, in most cases with institutions where they took college work, follows: Z. G. Clevenger, professor of physical training and director of athletics; Dr. Charles F. Dunn, University of Chicago, assistant professor of education; Arthur F. Piene, Wesleyan college and University of Illinois, assistant professor of history; Miss Annie R. Cahoon, Milwaukee-Downer college and University of Wisconsin, assistant professor of physical education for women; R. G. Kloeffer, University of Michigan, assistant professor of electrical engineering; Adolph Schultz, University of Wisconsin, assistant professor of athletics and assistant coach; E. A. Bauer, Colgate university and International Young Men's Christian Association college, assistant professor of physical education for men; Don L. Burk, Columbia university, instructor in English; R. K. Bonnett, Kansas State Agricultural college and University of Wisconsin, instructor in crops; Charles D. Christoph, University of Michigan and University of Missouri, instructor in English; A. H. Hersh, Princeton university, instructor in zoölogy; Elton W. Calkins, Northwestern university, instructor in voice; Dr. M. C. Tanquary, University of Illinois, instructor in entomology and assistant entomologist; Miss Elizabeth Maclean, Iowa State college, instructor in English; W. H. Pilemmer, University of Michigan, instructor in physics; Lee Light, Kansas State Agricultural college, instructor in English; R. F. Smith, Albion college and University of Michigan, instructor in physics; E. C. Jones, Iowa State college, instructor in shop practice; T. S. Townsley, Purdue university, assistant in poultry husbandry; W. S. Buck, Kansas State Agricultural college, assistant in steam and gas engineering; Fred H. Bundy, assistant in blacksmithing; F. E. Fox, assistant in poultry husbandry; Miss Josephine Perry, Simmons college, assistant in domestic science; William Calvert, Kansas State Agricultural college, assistant instructor in plant propagation and greenhouse foreman; Cecil Elder, Kansas State Agricultural college, assistant in pathology; Karl Reed, University of Ohio, assistant in chemistry; W. D. Knickerbocker, Michigan Agricultural college, assistant in steam and gas engineering; Miss Mabel Baxter, Kansas State Agricultural college, assistant in library; Miss Lenora Richards, assistant in domestic science; Miss Wanda Kirkbride, Columbia university, assistant in botany; J. P. Cavanagh, assistant in heat and power; L. H. Drayer, assistant in heat and power; A. E. Lawson, Kansas State Agricultural college, assistant in animal husbandry; Miss Mary McDonald, assistant in domestic art; John A. Dawson, Stout institute, assistant in shop practice; Arthur Douglas, Kansas State Agricultural college, assistant in shop practice; Miss Alice Mae Sweet, Kansas State Agricultural college, fellow in debating; Floyd Hawkins, Kansas State Agricultural college, fellow in debating; L. S. Hobbs, Texas Agricultural and Mechanical college, fellow in steam and gas engineering; C. A. Bjorkman, Worcester Polytechnic institute, fellow in electrical engineering; L. H. Fairchild, Kansas State Agricultural college, fellow in dairying; J. D. Hun-

(Concluded on Page Four)

PRIZES AT BOTH FAIRS

COLLEGE LIVE STOCK STARTS YEAR WITH WINNINGS

Cattle Take High Places at Hutchinson and Topeka—Professors in Institution Are Sought for Judges of Many Exhibits

The college live stock started the institution's new year by winning at both Hutchinson and Topeka.

Three first prizes, one second, two thirds, and four fourths were won by the college show cattle in the live stock division of the free fair at Topeka. In addition to these prizes, King Dale, a 2-year-old shorthorn, was placed champion of all steers at the show.

Some of the best herds in Kansas, Missouri, Nebraska, Iowa, and other central states were represented at the show. The college stock won against stiff competition.

Following are the winnings of the college stock:

WINNINGS AT TOPEKA FAIR

Two-year-old class—First on King Dale, shorthorn; fourth on Capper, Hereford.

Yearlings—Third on Beau Hessler, Hereford; fourth on Barnton Dale, shorthorn.

Calves—First on Rose Gay Lad, Angus; second on Barnton.

Herds—First on shorthorn, third on Hereford, fourth on Angus.

King Dale, shorthorn, was awarded championship.

KING DALE WINS AGAIN

The college made a creditable showing likewise at the state fair at Hutchinson. The winnings were as follows:

Two-year-old steers, first.

Steer calves, first and second.

The animal awarded championship was King Dale.

This week the college stock is being shown at the American Royal in Kansas City.

College men were in demand as judges at both fairs. At Topeka A. M. Paterson judged the Galloway cattle and the sheep; S. C. Salmon, farm products; J. B. Fitch, Guernsey cattle; Miss Frances L. Brown, home economics products; and M. F. Ahearn, fruits. At Hutchinson Dr. C. W. McCampbell judged the horses and Albert Dickens the horticultural products. A. M. Paterson is judging this week at the Oklahoma state fair.

CHICKENS NEED CONSTANT SUPPLY OF FRESH WATER

Potassium Permanganate of Potash for Antiseptic, Says Professor Lippincott

Chickens need a constant supply of fresh water, according to W. A. Lippincott, professor of poultry husbandry in the Kansas State Agricultural college.

"Running water is best," says Professor Lippincott, "but if this is not available keep the water fresh. Add enough permanganate of potash to make it a wine red. This amount will act as an antiseptic in preventing the transmission of disease through the water and will aid also in keeping down intestinal parasites."

An advantage of dairying is that it provides a steady income throughout the year. You harvest corn and wheat once a year. You harvest milk twice a day and turn it into ready cash.—Farmers Mail and Breeze.

GAIN IS 64

Enrolment in the Kansas State Agricultural college is 64 above that of the same time last year. The number of students now in residence is 2,268. At this time in 1915, 2,204 were here.

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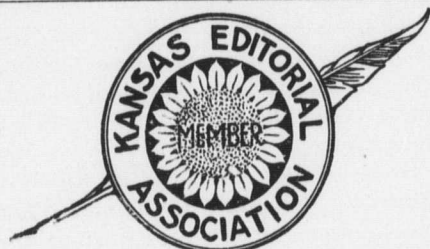
H. J. WATERS, PRESIDENT.....Editor-in-Chief
N. A. CRAWFORD.....Managing Editor
J. D. WALTERS.....Local Editor
ADA RICE, '95, M. S. '12.....Alumni Editor

Except for contributions from officers of the college and members of the faculty, the articles in THE KANSAS INDUSTRIALIST are written by students in the department of industrial journalism. The mechanical work is done by the department of printing. Of these departments Prof. N. A. Crawford is head.

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WEDNESDAY, SEPT. 27, 1916

WHERE CONSUMER PAYS LITTLE

That the newspaper reader gets more for his money than the reader of any other sort of periodical literature is shown statistically by a review of the printing and publishing industry of the United States in the years 1914 and 1909, just published by the bureau of the census.

The figures show but 31 per cent of the revenue of the newspapers derived from subscriptions, the remaining 69 per cent coming from advertising. In the case of other periodicals, the subscriber pays 47 per cent and the advertiser 53 per cent. These figures indicate not only the high worth of the newspaper product to the reader in proportion to what it costs him but also the high value placed upon newspaper advertising by business men, who are willing to pay so high a proportion of the cost of publication.

All periodical publications obtained a large increase from 1909 to 1914, both in subscriptions and sales and in advertising. Annual subscriptions and sales increased from \$135,000,000 to \$167,000,000 and advertising from \$202,000,000 to \$255,000,000.

The review further shows that the American people are a nation of newspaper and magazine readers. In 1914 they spent nearly twice as much for periodical publications as for books, the figures being \$167,000,000 against \$97,000,000. Of the total income secured by the publishing business, amounting to \$810,000,000, more than half was obtained through subscriptions and sales of periodical publications and advertising in them. A little less than a third more was secured through job printing, leaving but a small proportion for books and pamphlets, music, machine composition for others, book binding, engraving, lithography, and the like.

The census bureau reports 31,612 printing and publishing establishments, about 15 per cent of which are in New York. Kansas stands fourteenth in the list of states, with 763 establishments. The numbers dwindle down to 54 printing and publishing houses in Delaware and 12 in Nevada.

MONEY AS A HANDICAP

A quarter of a century or more ago it was customary to regard the child of poor parents, if he had natural ability, as more likely to succeed in the better things of life than the child born with wealth. In more recent years there has been a tendency to point out the advantages of being born rich, it being urged that the boy or girl whose parents had means did not have to concern himself about anything except his education, and therefore could obtain training leading to greater success in life.

Reversion to the older idea is made by Dr. Ray Lyman Wilbur, president of Leland Stanford university, who

says that in his institution "experience has shown that the poor boy has, on the whole, made a better record both as a student and afterwards." President Wilbur has sent a letter to the parents of all his students, pointing out the handicap of wealth to a student, particularly if he is allowed to spend it freely.

"It takes time to run a motor car and it often leads to life off the campus, to extravagance and much foolishness," says the letter, adding: "There is plenty to do in the way of variety right at the university, with its swimming pools, athletic fields, gymnasiums, beautiful walks and the like. There is no need to go to San Francisco more than once or twice a semester, and this trip can be conveniently and cheaply made by train. There is no need to supply money for orchids, for dance parties or for taxi hire.

"The student who cannot be content to lead the clean, simple, industrious life expected on the Stanford campus should go elsewhere. If you do not feel our idea of student self-government is right, and if you do not feel that it expresses the right attitude toward alcohol, hazing, self-control, payment of debts, and things of that sort, it would be better to keep your son or daughter at home or send them elsewhere. It will save them the trouble that is almost sure to come some time in a four year course and will give the university more time to develop those who have the disposition to conform."

Persons who have made any actual investigations are likely to support Doctor Wilbur's conclusions. Lack of money is at times a handicap to a boy or girl, but seldom is it anything like as much a handicap as wealth. In the Kansas State Agricultural college, 55 per cent of the male students and 24 per cent of the women students were last year supporting themselves, and most of the others were partly earning their way or else practicing economy. It is this large group which forms most of the real substance of the institution. It exemplifies the same ideals for which the institution stands and it will doubtless contain nearly all the future alumni who achieve real distinction in life.

RETAIN THE GOOD POULTRY

Two factors are working to reduce the stock of poultry on hand. One is the high price of poultry, both live and dressed, which obtains at present, and the other is the high price of feeds. The latter condition will likely continue throughout the year. From reports received, we find that in many places farmers are selling practically their entire stock because of these two conditions. Under ordinary circumstances, we believe this to be a mistake and that it will be well for our readers to retain their usual amount of laying and breeding stock. In all probability, eggs will continue to bring good prices and, even though grain is high, the price of eggs will probably parallel it. Those who sell off and depend upon buying their eggs or breeding stock in the spring in order to replenish their flocks will run the chance of being disappointed. Our advice is don't sell too closely. However, the standing advice always in order, is: Sell everything that is not first-class stock.—Pennsylvania Farmer.

AGRICULTURE A PROFESSION

That the farms of the country will eventually pass to the ownership of those who can use them best is the opinion expressed the other day by a well known rural life investigator. This means that the men who know best how to manage a farm will eventually be the man who owns one, and that farming must become better as all farmers learn to use something other than their hands.

Two generations hence agriculture in the United States will be a profession. The man who owns and operates a farm will be a man trained in a professional school, just as a doctor, a lawyer, a teacher—and lately a newspaper man—is trained in a professional school. There will be no law passed requiring him to pass a

professional examination before he is given a license to practice the profession of agriculture, but there will be an economic law that will force him to give over to others who can manage a man's sized job better than he can, if he cannot do it well.—Minnesota Farm Review.

THE TASK OF ADVERTISING

The great task of advertising is to help to deliver goods from the producer to the consumer better and with less waste than they can be delivered without this help.

Unfair or ignorant attacks upon advertising are inevitable. They are to be expected in any line of effort which touches the public at large, and of which it is not easy for the public to have more than a superficial knowledge.

The Common Things

F. L. Pinet in the Kansas Teacher

HAS it ever occurred to you that the most beautiful things in life are the common things—things which pauper may possess as well as prince, things which plowman and poet may claim with equal right? For is it not the Sea, the sibilant-whispering Sea, whose lips kiss the sands of a thousand shores, and in whose passionate embrace are nestled myriad argosies,—is not the Sea, with its wealth of wonder and its mystery, the heritage of all? Is not the splendor of the Sun yours and mine as well as Shakespeare's? Shall not the serenity of mid-summer skies bring us solace as well as to him who "sitteth in the seats of the mighty"? Let a man but have eyes and he shall see beauty everywhere. Night, with her train of stars, shall comfort him. The music of the summer rains shall fill his soul with gladness, and the song of the lark shall give him kinship with the Infinite. He shall have fellowship with the grass and the flowers and the trees, and the slow-winding river and the majestic mountain shall be of his brotherhood. Before his eyes shall pass the scarlet-clad glory of Autumn, and always for him in the Loom of Life there shall be wrought a wondrous tapestry, woven anew each day from the warp and woof of common things, but of imperishable beauty, because designed and patterned by a Weaver whose name is God.

The one convincing defense which advertising can make against such attacks is its record of achievement. Upon this alone can it afford to stand. This record, however, will be a conclusive answer to criticism only in so far as it shows a practical combination of truth and real service. The desire to do honestly the work assigned to advertising needs at all times to be supplemented by ability to do it well.—Advertising News.

REPORTERS CAUGHT NAPPING

Journalistically, the disaster to the gigantic Quebec bridge on Monday has been the big event of the week in Canada. But by the irony of fate practically every newspaperman who went to the ancient capital to see the raising of the five-thousand-ton center span, missed the tragedy in which the daring engineering experiment terminated.

Invitations had been extended by the Dominion Bridge company to the press of the larger cities of Canada to be represented at the span-raising ceremony, but only Ottawa, Montreal, and Quebec papers responded. The reporters, to the number of over a dozen, were accommodated on the government steamer Druid, on which were also several members of parliament and the Quebec municipal officials. The Druid left the city about 4:30 a. m., followed the span up the river from Sillery, and stood by while it was being attached to the lifting apparatus.

After it had been demonstrated that the two cantilever arms could bear the weight of the suspended span, and after the raising process had been successfully started, the Druid, at the urgent request of the afternoon newspaper representatives, returned the eight miles down the river to Quebec. This was about 9:30. At 10:50 when the span fell and the big event of the day was pulled off, the scribes were

far away dashing off a story, the relative merit of which had been dwarfed by the subsequent happening. It remained for a moving-picture operator, who was so fortunate as to get a picture of the tragic occurrence, to rush into the city and give the papers the first personal story of the event.

Of course news of the collapse of the span was quickly telephoned to Quebec, and the local representative of the Canadian Press had it on the wires within ten minutes. Some reporters returned to the bridge in motors in order to get interviews with eye-witnesses, while others revamped their stories from information gleaned from returning spectators. The result was that practically every story in the Monday afternoon and Tuesday morning editions was written impersonally.—Editor and Publisher.

I SHALL GROW OLD

Marguerite O. B. Wilkinson in the Independent

I shall grow old; when the wild earth is calling
I shall sit quietly, at last, nor go
To race the quickened winds where rain is falling
In woods I used to know.
Though I still feel the lure of wings that flutter
Across the bayou on the edge of day,
And of the silver stream where quick fish scutter,
I shall not go, but stay.
Yet I shall smile, and smiling shall remember
The streams I forded and the trout I caught,
Or the leaf-kindled fires of mild November
And the strange peace they brought.
Glory of earth in her midsummer madness,
Glory of great, grave trees and sunny sea,
The swimmer's lithe dominion won in gladness,
In youth and health set free.
I shall be glad of sunburn and rough going,
Of weariness that found a perfect rest
Where our firm mother earth made ready, showing
Her rough and rugged breast.
I shall grow old—but memories strong and tender
Shall give me joy while earth's wild song is sung;
The great, glad earth I know, in all her splendor—
With her I have been young!

SUNFLOWERS

You can always pick out two types in a restaurant—the man who calls all the waiters "George" and the one who calls them "Looney."

"He is the sort of man," said Zeke Hawkins in discussing his wife's cousin, "who will travel all through New England with his watch set in central time."

A FALL POEM

The autumn days come on apace,
The season hastes, kind sirs,
When I put on my overcoat
And wife takes off her furs.

AND THEY NEEDN'T BE SO LONG, AT THAT

"Coats will reach to the hems of skirts this year," announces a Chicago newspaper.

RESIGN AND MAKE A HIT

Mr. N. L. Engelhardt, who resigned in May as superintendent of schools at Dunkirk, N. Y., has become an associate professor in educational administration at Teachers' college, Columbia university. In resigning at Dunkirk Mr. Englehardt received official letters of thanks from a number of local organizations.—School Board Journal.

QUALIFYING FOR OFFICE

To the voters of Iowa county: Being urged by several persons from various sections of the county to come out for the office of county clerk on the Republican ticket at the September primary, I hereby announce my name as a candidate for the nomination for the office. I have lost my left arm and have only three fingers and a piece of thumb left on my right hand.—Mineral Point (Wis.) Tribune.

"The indifference of the multitude is the opportunity of the few." This is a recent utterance of a college professor, but there never will be a more truthful statement of the situation as regards the fruit growing industry. Opportunity without limit awaits the man who will supply the demand for strictly first quality fruit. The man who has the nerve to put up a pack that can be absolutely depended upon is the man who will make money, and there are not enough of that sort of men yet in the fruit business to cause any very serious competition, but the slightest variation in quality is fatal to success.—The Fruit Grower.

A QUARTER CENTURY AGO

Items from The Industrialist of September 26, 1891

The Webster society has renewed its charter.

P. C. Milner, '91, is at work in the Santa Fe offices at Topeka.

Mrs. Winchip reports the number receiving daily instruction in sewing to be 112.

The college has thus early received application for aid in three farmers' institutes.

The newspapers speak enthusiastically of the station exhibit at the state fair last week.

For the information of the peach-hungry, it is announced by the horticulturists that the crop has all been sold.

The later varieties of grapes suffer seriously from the dry weather, the yield in many cases being reduced by one half.

Professor Kellerman writes from Columbus, Ohio, that the family are comfortably settled in their new home and like it every way.

The physics department will have charge in future of the weather observations. The record has been kept for three years past by Assistant Chemist Breese.

The strawberry beds, in which there are about 80 varieties, show the effect of thorough irrigation in their fresh green color. The plants appear quite as vigorous and healthy as they did in April.

The lecture of Friday afternoon, given by Professor Nichols, was entitled "The Growth of Mathematics." It traced the study through all the stages of calculation from 1000 B. C. to the present; from the simplest distinction into one, two, and more, up to the indefinite possibilities of the calculus, touching upon the thinkers in all ages who have helped to build up the science.

AMONG THE ALUMNI

Arthur Unruh, '15, is living at Pawnee Rock.

R. C. Cole, '02, is farming at Hudson, S. D.

Miss Ivy Porter, '16, is teaching in the rural high school at Vinland.

G. Wiley Brown, '13, has moved from Hoisington to Hardin, Mont.

Miss Edith M. Maxwell, '14, has returned to her teaching at McPherson.

Otto Hupp, '15, has accepted a new position in dairying in Silver City, N. M.

Miss Lura Gilmore, '13, is teaching science in the Newkirk (Okla.) high school.

Miss Edith O'Brien, '11, is teaching domestic science in the schools of Cottage Grove, Wis.

Miss Edith E. Arnold, '16, is teacher of mathematics and science in the Summerfield high school.

J. L. Jacobson, '15, is teaching agriculture and elementary science in the Salina high school.

F. W. Milner, '15, is director of agriculture and physical training in the Concordia high school.

W. B. Adair, '16, is teaching agriculture and allied subjects in the Kimball county high school.

Mrs. Winifred (Cowan) Blair, '11, of Bard, Cal., spent the summer in Kensington with her parents.

Miss M. Beulah Wingfield, '14, is instructor in domestic science in the Lake City (Minn.) high school.

Miss Laura M. Wingfield, '14, is teaching domestic science in the high school at Pleasant Garden, N. C.

Dr. R. T. Nichols, '99, has resigned his position as college physician and has resumed practice at Liberal.

M. S. Cole is an instructor of apprentices in the shops of the Union Pacific railway at Pocatello, Idaho.

Miss Grace Lyons, '15, is employed to teach domestic science and art in the new high school at Hitterdal, Minn.

Nelle E. Lindsay, '12, has charge of the home economics work in the new Union high school, Santa Paula, Cal.

Dr. L. B. Jolley, '01, and family motored from Chicago in July and spent a week visiting relatives in Manhattan.

Charles M. Haines, '09, has returned to his work as instructor in manual training in the schools of Fort Worth, Tex.

Ray L. Graves, '12, is agricultural agent for Washington county, Oklahoma, with headquarters at Bartlesville.

Elliott Ranney, '16, has resigned his position in the city schools of Manhattan to accept a similar position at Wichita.

Miss Anna Pratt, '14, is teaching in the newly installed department of home economics in the Ponca City (Okla.) schools.

Miss Frances Ewalt, '15, has charge of the department of domestic science in the new high school at Morrill this year.

Homer E. Newhouse, '15, is now manager of the Emporia branch of the Bushong Electrical works and is proving very successful.

Earl J. Trosper, '10, of Lake City, Minn., is secretary and treasurer of the Horse Breeders' Association of Eastern Minnesota.

Harry L. Cole, '12, is second lieutenant, Company M, Third Illinois national guard, and is assigned to duty at Fort Houston, Tex.

Miss Essie L. Baird, '15, is beginning her second year's work as instructor in domestic science and art in the Fredonia high school.

John M. Scott, '03, of the University of Florida Agricultural Experiment station, is the author of a recent bulletin on "Pig Feeding."

W. T. Parry, '12, is director of agriculture at St. Cloud, Minn. He is doing a large work in improving crops, live stock, and rural life in his county.

E. Q. Perry, '15, who has been teaching agriculture and manual training at Alliance, Nebr., has entered college for graduate work this fall.

Prof. M. F. Ahearn, M. S. '13, and Mrs. Mary (Davis) Ahearn, '04, have returned from a vacation spent at Mr. Ahearn's former home in Massachusetts.

Mr. and Mrs. H. F. Brandies were callers at college recently. Mrs. Brandies was Miss Alma Levengood, '11. They are making their home at Kensington.

H. T. Nielsen, '03, is county agent of Marion county, Missouri. His headquarters are at Palmyra. Much interest is being taken in the farm bureau work in the county.

A. R. Losh, '10, assistant state engineer, has accepted a position with the federal office of good roads at Washington, D. C. He expects to begin his new work October 16.

A. B. Gahan, '03, has severed his connection with the Maryland Agricultural college and is now engaged in work with the United States National museum, Washington, D. C. His address is Berwyn, Md.

Thomas K. Vincent, '16, is with the International Harvester company at Milwaukee, Wis. He traveled for the company during the summer, and will resume this work in the spring after spending the winter at the engine works.

George L. Clothier, '92, who is operating a live stock farm in Chase county, was recently offered \$5 an acre for an oil and gas lease on his 900 acre farm. This had been the highest price offered for oil and gas leases in Chase county.

Miss Mamie Hassebrook, '04, has resigned her position in the State College of Washington and will have charge of the Commercial club dining hall, Topeka. While in college, Miss Hassebrook specialized in institutional cookery.

Miss Abby L. Marlatt, '88, professor in the University of Wisconsin, was a Manhattan visitor the first week in September. On her return trip she stopped at Lincoln, Nebr., to visit Miss Alice Loomis, '04, of the University of Nebraska.

Dodderidge C. Tate, '16, and Walter Deal, '16, are taking the student course of the Western Electric company, and are stationed at Cicero, Ill. After December 1, they will be transferred to the engineering laboratories of the company in New York.

E. M. Parrish, '14, writes that he is enjoying his work as extension agent for the department of agriculture of the University of Missouri. He is stationed at Dalton, Mo. He sends his check for \$20 for a life membership in the Alumni association.

Dr. C. N. Allison, '01, and family, of Falls City, Nebr., spent a day on the campus renewing friendships while motoring to Florence, Kan. Doctor Allison is enjoying an excellent dental practice. The oil prospects are promising on his Marion county farm.

Mrs. Flora (Hull) Taylor, '07, is in Mexico City, where her husband, Walker C. Taylor, is associate secretary of the Young Men's Christian association. "We are enjoying Mexico very much," she writes, "in spite of the uncertain conditions prevailing throughout the country."

Stuart Cole, '04, teacher of agriculture and science, North Yakima, Wash., spent his vacation in Manhattan, building a house on a lot that he owns on Vattier street. He returned to North Yakima early in September. His sister, Mary Margaret (Cole) Wilson, was in Manhattan at the same time and likewise built a house on Vattier street.

Mrs. Lulu (Docking) Weber, '09, won her suit for life insurance at Reno, Nev., in the latter part of August. The verdict of the jury was important because it decided that Frank Weber came to his death by strangulation at the hands of his assailants. She has returned to Manhattan, and expects to spend the winter at Grand Salute, Tex., with Mr. Weber's parents.

MARRIAGES

LANE-BOWMAN

Miss Mary Stephen Lane, '16, and Dr. J. M. Bowman were married September 6 at the First Baptist church in Manhattan. They will reside at 505 Colorado street, Manhattan.

DYER-FREY

Miss Mima Louisa Dyer, '14, of Riley, and Mr. Jesse J. Frey, '14, of College Hill, were married September 13, at the home of the bride. They will reside in Chicago, where Mr. Frey has a civil service position.

POWELL-COXEN

Miss Mable Grace Powell, '14, and Mr. Harry H. Coxen, '15, were married on August 19 at the home of the bride's sister in Hoisington. They will reside in San Marcos, Tex., where Mr. Coxen is instructor in manual training in the Texas State Normal school.

FALKENRICH-BAXTER

Miss Laura Falkenrich, '15, and Mr. Arthur Baxter were married Wednesday evening, August 30, at the home of the bride in Manhattan. They will be at home at Evansville, Ind., where Mr. Baxter has charge of the manual training department of the high school.

ELLIOT-DAVIDSON

Miss Marguerite Elliot of Manhattan and Mr. Allan Park Davidson, '14, of Curtis, Nebr., were married August 30 at the First Baptist church in Manhattan. They will be at home in Curtis, where Mr. Davidson is engaged in agricultural instruction and experimentation.

PERRY-TANQUARY

Miss Josephine Woodward Perry and Dr. Maurice Cole Tanquary were married at 11 o'clock in the morning of July 1 at Manhattan. The ceremony was performed by the Rev. A. E. Holt, Ph. D., pastor of the Congregational church.

Doctor Tanquary had recently returned from a three years' stay in the far north with the Donald B. McMillan Crockerland expedition. He is assistant professor of entomology and assistant entomologist in the college.

Doctor and Mrs. Tanquary are at home at 127 South Juliette avenue, Manhattan.

BIRTHS

Born, to Mr. W. R. Horton and Mrs. Margaret (Huston) Horton, '13, Atwood, on July 13, a daughter, Annie Haley.

Born, to Mr. C. R. Jaccard, '14, and Ruth (Bright) Jaccard, '12, Kirksville, Mo., on July 17, a son, Robert Bright.

Born, to Mr. Frank Weber, deceased, and Mrs. Lulu (Docking) Weber, '09, on June 17, a daughter, Frances Elizabeth.

Born, to Mr. C. A. Patterson, '14, and Mrs. Maude (Marshall) Patterson, '14, at Helena, Okla., on June 29, a son, Charles Alfred.

Born, to Mr. L. M. Jorgenson, '07, and Mrs. Annie (Harrison) Jorgenson, '09, of Jewell City, on June 24, a daughter, Mary Christine.

Born, to Mr. William R. Curry, '14, and Mrs. Minnie (Pence) Curry, '14, of Cottonwood Falls, on September 12, a daughter, Mary Lorene.

Born, to Mr. and Mrs. D. C. Bascom, on September 19, a daughter, Elizabeth May. Mr. Bascom is of the class of 1909 and Mrs. Bascom a graduate of Baker university in 1908. Mr. Bascom is field agent for the Great Western Sugar company.

PHI KAPPA PHI INITIATES

Dr. Samuel Wendell Williston, '72, of the University of Chicago, was initiated as a member of Phi Kappa Phi, national scholarship fraternity, Saturday. Doctor Williston is an authority on paleontology.

Arthur Leidigh, '02, was initiated also last week. Mr. Leidigh was formerly assistant professor of crops in this institution, and is now agronomist in charge of soil improvement at the Texas Experiment station.

Miss Helen B. Thompson, '04, and Miss Jessie May Hoover, '05, were initiated in the summer. Miss Thompson is now professor of home economics in the Connecticut College for Women at New London, Conn. Miss Hoover is professor of home economics in the University of Idaho.

Phi Kappa Phi is the national honorary scholarship fraternity which was installed in the college last year. Alumni of college who are elected to membership are initiated whenever they are in town.

WHITFORD TO YALE

Dr. H. N. Whitford, '90, has been appointed assistant professor of tropical forestry at Yale university.

Says the Yale Forest News:

"The school is fortunate in securing a man to carry the major part of the work in tropical forestry who has had a wide experience in tropical forests. Doctor Whitford received the degree of doctor of philosophy from the University of Chicago in 1903, where he made forest ecology the major part of his work. For a time he was instructor in botany at the Armour Institute of Technology, and later assistant in ecological botany at the University of Chicago. From 1904 to 1912 he was engaged in botanical and forestry work in the Philippine islands, where he held the following positions: botanist, bureau of science, 1904-1906; forester, bureau of forestry, 1906-1908; chief, division of investigation, and forester, bureau of forestry, 1908-1912.

"As chief of the division of investigation, he was resident head of the Philippine Forest school connected with this division and the University of the Philippines. In this latter institution he had the title of assistant professor of silviculture and forest botany.

"In 1911 he was commissioned by the director of forestry of the Philippine bureau of forestry to make a special investigation of the workings of the forest schools in the Federated Malay States, Burma, and India. In connection with this work he took advantage of the opportunity to make a brief study of the silvicultural problems in a number of forests in these three countries.

"After his return from the Philippine islands he was first engaged in some private forest investigations on the west coast of Mexico, but since September, 1913, he has been special forester of the commission of conservation of Canada for forest investigations in the province of British Columbia.

"Doctor Whitford has published many scientific articles on botany and forestry and now has two publications ready for the press, namely, 'The Forests of British Columbia' and 'Forest Conditions in the Philippine Islands.'"

SOLVES ORIENTAL PROBLEM

High praise is given by Hawaiian newspapers to the work of the experiment station in Hawaii under the direction of John M. Westgate, '87. The solution of a single problem in pineapple culture has added a million dollars, it is estimated, to the taxable property of the islands.

Under the title, "A Magnificent Discovery," the Pacific Commercial Advertiser comments editorially:

"Modern science performs miracles far more wonderful than the black magic of the dark ages, but the miracles of today are accepted after one day's wonderment as a matter of commonplace without undue praise being rendered to the magician, often without reward conferred other than the momentary fame which publicity gives the discoverer.

"As every one in Hawaii knows, there are some 6,000 to 10,000 acres of beautiful agricultural lands on the Wahiawa plains that ought to grow splendid crops of pineapples, but unfortunately do not, because, as the scientific men long since discovered, the soil contains 2 to 3 per cent of manganese dioxide. Manganese dioxide is worth much coin if it is concentrated 90 per cent strong in ore deposits. Manganese salts are present in infinitesimal amounts in practically all soils, the world over, and their appli-

cation as fertilizer has yielded good results, in the submerged rice fields of Japan, and with other crops in other lands.

"Hence there has been a good deal of speculation among the agriculturists as to just why manganese should be a beneficial fertilizer in some places but a deadly poison to the pineapple plant in Hawaii. Not less than 6,000 acres of pineapples planted on the Kunia and Wahiawa manganiferous soils on this island have had to be abandoned, at great financial loss to small and big planters. The plantations have employed experts, have laid out experimental plots, and have at great cost endeavored to devise ways of so neutralizing the wicked manganese.

"Enter Uncle Sam.

"The United States department of agriculture has maintained an experiment station for the benefit of Hawaiian farmers since 1901. Its duties are, to tackle any problem that is for the benefit of Hawaii, and the men who are at the head of the work are given considerable leeway in laying out lines of research investigation. It seemed to Director J. M. Westgate that the mere discovery that it was the manganese in the Wahiawa soils that prevented pineapples growing there was not enough. Hence after stating his problem to Washington he secured the assignment to this station of an 'industrial chemist,' one of the kind of twentieth century magicians that are the outgrowth of modern practical business efficiency methods.

"M. O. Johnson, Purdue University B. Sc. in Chemical Engineering, who had been in the employ of the Western Electric company at Chicago, the United States Rubber company at New York, and who was then working on chemical biological problems in the bureau of animal industry at Washington, was selected as the most likely young scientist to solve the manganese puzzle for Hawaiian small farmers.

"Mr. Johnson's training had been in a practical school and so the first thing he did after coming here a year ago was to reduce to charts and curves all the chemical analyses, and there were hundreds of them, that had been made at the experiment station, of pineapple soils and the pineapple plant itself. Nothing unusual developed in the case of the soil charts, but when the analyses of pineapple plants grown on manganiferous and manganeseless soils were compared by the graph or chart method it appeared that there was practically no iron present in the ash of plants grown in the manganese soils.

"The trouble was not due to the manganese having corroded the roots, as had been previously suggested, but to the fact that the manganese had locked up all the iron in the soil so tight that none of it was soluble in water. The pineapples were starving to death for iron in soils that contained as high as 30 per cent of this element which is absolutely essential plant food.

"The solution offered was so simple that all the chemists who have wasted grey matter on the manganese problem will wonder why no one ever thought of it. All there was to do was to give the sick plants an iron tonic. How this is now being done on a commercial scale in the fields of the Hawaiian Pineapple company at Wahiawa appears elsewhere in these columns. It suffices to say that a method has been worked out by industrial chemist Johnson. Doubting Thomases, if there are any, are respectfully referred to adjoining pineapple fields, treated and untreated, which show crops of twenty, and two, tons of ripe fruit per acre, respectively.

"This work has been done for Hawaii by the United States department of agriculture, without cost to the pineapple growers, other than as they like all other good American citizens pay federal taxes. The discovery adds a potential million dollars' worth of taxable property to this Territory, because the Hawaii experiment station has proved that bumper crops of pines can be grown on manganese soils."

KEEP MEDICINE ON HAND

STOCKMAN SHOULD ALSO HAVE SUPPLY OF SIMPLE INSTRUMENTS

Dr. C. W. McCampbell Gives List of Remedies and Other Articles Useful in Treating Cattle and Horses for Ordinary Ailments

That every stockman should have a well equipped but not necessarily expensive medicine chest, is the opinion of Dr. C. W. McCampbell, assistant professor of animal husbandry in the Kansas State Agricultural college.

This chest may be made out of a good box, points out Doctor McCampbell, and should be sufficiently well supplied with instruments and drugs to meet emergencies likely to arise.

Some of the articles that should be included are a sharp knife, a pair of artery forceps, scissors, a metal dose syringe, three or four thermometers, a boling gun for giving physic balls, a gallon can with hose attachment for giving injections, a hoof knife, nippers, a rasp, a hoof hook, a hypodermic syringe, needle and thread, bandages and absorbent cotton.

ANTISEPTIC IS IMPORTANT

All these are articles which may be used by any farmer. They should be supplemented by some simple remedies which may be purchased at any drug store. A good antiseptic is important. Creolin probably is the best and safest and is used in a 2 to 5 per cent solution. For a milder antiseptic, potassium permanganate—one teaspoonful to two gallons of water—is recommended.

For a physic linseed oil is good but cathartic balls are safer and more convenient to give. Epsom salts may be used for cattle but are not recommended for horses. In case a quick physic is desired the hypodermic syringe is used and an injection of one grain of arecoline is given.

SUGGESTS TWO LINIMENTS

Two liniments are recommended. One, which is mild, is composed of one ounce of turpentine, one ounce of strong ammonia, 48 grains of camphor gum, one to two ounces of iodine, and enough alcohol to make a pint of the mixture. A stronger liniment may be made from two ounces of camphor, two ounces of turpentine, four ounces of tincture of iodine, 16 grains of bichloride of mercury, and eight ounces of alcohol. This should not be rubbed unless a blister is desired. In that case use two ounces of cerate cantharides and one dram of bichloride of mercury or cantharides one part and lard eight parts.

A good dusting powder is made of 35 parts of powdered alum, 13 parts of zinc oxide, one part of boric acid, one part of phenol, and one part of camphor gum.

TO TREAT DISTEMPER

For distemper first give a tonic, then steam the respiratory tract with creolin or creosote vapor. This is done by covering a candy bucket with a grain sack in such a manner that the horse's head can be covered with it. Then nearly fill the bucket with hot water to which has been added one tablespoonful of creosote or creolin. If any abscesses form, these must be opened and drained, but great care must be exercised not to cut an artery. If a swelling does not come to a head apply a linseed meal poultice, to which some creolin has been added.

For pink eye first give a tonic and then wash the eyes daily with a saturated solution of boric acid. This is made by adding five cents' worth of boric acid to a quart of water and allowing the boric acid to settle after shaking the mixture thoroughly. Only the clear solution is used.

INSTITUTIONAL LIFE SEEKS TRAINED WOMEN

Domestic Science Department of College Aims to Prepare Students for Practical Field

Need of institutional work has come as a result of altered economic and social conditions. People are living in large groups and clubs, and this institutional life demands trained women to manage the food supply,

laundry, and general housekeeping and to promote the home spirit, according to Miss Margaret Haggart, professor of domestic science in the Kansas State Agricultural college.

The possibilities of the use of such trained women are so many that the supply is far below the demand, points out Professor Haggart. This business training can be carried over directly from the institutional field into their own homes. The field is a broad one, including managers of dormitories, clubs, boarding halls, tea rooms, lunch rooms, and cafeterias.

A new branch of the work of domestic science at the college has been the introduction of the cafeteria. It aims to train efficient managers for the growing demand along this line. Incidentally it offers a source of economy for those students who take their meals there. One girl reports that she saves 88 cents a week on her board.

The courses offered in connection with the cafeteria work are institutional cookery, institutional management, cafeteria practice, and bookkeeping and accounting.

The college already has graduates holding responsible positions of this kind. Miss Clara Willis, '15, has taken the place vacated by Miss Valda Downing, '15, as head of the cafeteria of the Young Women's Christian association at Los Angeles. Miss Flora Monroe is manager of the University club of Cornell university. Miss Bertha Baker, '15, is apprenticed with the New York school lunch committee. Miss Bess Walsh, '15, is in charge of the cafeteria of the Young Women's Christian association in Kansas City, Kan. Miss Grace Willets has been elected to organize and manage the cafeteria in the high school of East St. Louis, Ill.

WRITE OF CHANGES IN ALFALFA COMPOSITION

Local Chemists Discuss Results of Experiments Conducted at College—Conclusions of Authors

How stage of maturity, mechanical losses, and conditions of drying affect the chemical composition of alfalfa, is discussed in a scholarly paper by C. O. Swanson and W. L. Latshaw, department of chemistry, Kansas Agricultural Experiment station, in the Journal of Industrial and Engineering Chemistry.

The experiments on which the paper is based were carried on by the departments of chemistry, agronomy, and animal husbandry.

These are conclusions reached by the authors:

The alfalfa cut in the bud stage has the largest ash and crude protein and the smallest crude fiber and nitrogen-free extract.

In each successive stage the crude fiber and nitrogen-free extract increase, and the crude protein and ash decrease. In pounds per ton the alfalfa cut in the earlier stages has more of crude protein and less of crude fiber.

The total amount of any or all nutrients produced per acre depends to a large extent on the yield, as shown by the fact that in 1914 the greatest amount of nutrients was obtained in the bud stage, while in 1915 the full bloom gave the greatest amount of total nutrients.

The leaves and stems differ in content of ash, ether extract, and nitrogen-free extract, but the greatest difference is in the per cent of crude protein and crude fiber. The leaves contain more than 2½ times as much protein as the stems, while the stems contain more than 2½ times as much crude fiber as the leaves.

In harvesting and handling there is a large loss of leaves, which loss affects the composition of the hay in an increase of crude fiber and a decrease of crude protein.

The alfalfa cured in the sun has a larger pure protein content as determined by Stutzer's method, than that cured in the shade. This difference is so great as to more than offset the influence of the loss of leaves. The differences in respect to pure protein content were most pronounced in the alfalfa cut in the earlier stages.

EQUIP WELL FOR BEES

MODERN MATERIALS ARE NECESSARY, SAYS DOCTOR MERRILL

Provide Small Cell Foundations in Hives, and Only Workers Will Be Hatched—Do Not Permit the Insects to Swarm

Get modern equipment for beekeeping, advises Dr. J. H. Merrill, assistant professor of entomology in the Kansas State Agricultural college.

The old box hive is too inconvenient and does not afford any means for the beekeeper to examine his colonies and know what they are doing, according to Doctor Merrill. On the other hand, with modern equipment the average farmer can control swarming, take out the honey at any time without seriously disturbing the bees, and readily examine them whenever he chooses. Moreover, when net profits are taken into consideration modern equipment costs less than the old box hive.

STRONG COLONIES ARE BEST

"The beekeeper does not want the bees to swarm," says Doctor Merrill, "because a good strong colony in one hive will make more honey than the same colony divided between two hives. The average man, however, cannot destroy the queen cells which furnish the cause of the swarming nor prevent hatching in the old hive."

"In the modern hive inexpensive wax foundations of the desired size may be purchased and the bees will build cells of the same size as the foundations. There are three kinds of cells, the largest being the queen cell, the smallest the worker cell, and the middle the drone cell. By providing the small foundations for worker cells, only worker cells will be built and only workers will be hatched."

STUDENT SHOULD LEARN WHAT NOT TO REMEMBER

Scientist Alumnus Addresses Assembly on Purposes of Education—Also Speaks to Science Club

Education is not acquirement of knowledge. The chief thing one gets in college is the art of knowing what not to remember. So said Dr. S. W. Williston, graduate of the college and professor of paleontology in the University of Chicago, in speaking before the student assembly Saturday.

The student comes to college to train himself in the ability to do things, pointed out Doctor Williston, and above all to learn to do his duty. Training is the application of one's faculties. There is no better way than along the line of applied sciences. Learning to do things well will bring success.

"No progress has been so great as that of education in the last 25 years," said the speaker. "Fifty years ago education was for the select few—it was the aristocratic thing. Today education is for the common man."

Doctor Williston addressed the Science club Friday evening on "Some Principles of Evolution."

FEW CHICKEN HOUSES APPROACH THE IDEAL

Many Are Too Small and Are Improperly Floored, Lighted, and Ventilated

There are as many types of chicken houses as there are of poultry raisers, and but few of these houses approach the ideal, asserts N. L. Harris, superintendent of the poultry plant, Kansas State Agricultural college.

"The ideal chicken house should be at least 20 feet long and 18 feet wide," says Mr. Harris. "The height should be such as will be convenient to the operator—about nine feet in front and not less than four feet at the back."

"With a house of these dimensions, there will be no frozen combs even in severe winter weather. Frozen combs usually result from keeping poultry in small houses."

"There is no question that cement is the best floor for poultry houses since such a floor is sanitary, vermin proof, and easily cleaned."

The manner of lighting and venti-

lating a poultry house is always important, in the opinion of Mr. Harris. Too much glass in a poultry house raises the temperature in the day and permits rapid radiation at night. The resulting wide variation of day and night temperatures is always injurious to the health of the fowls.

Probably the best means of providing adequate light and ventilation is to have two windows in the south side of the building with a cloth curtain between. During stormy days, while the curtain is closed, the windows will provide sufficient light and the curtains will allow sufficient ventilation without permitting drafts.

FACULTY MEMBERS STAY

(Concluded from Page One)

gerford, Kansas State Agricultural college, fellow in chemistry; Miss Minnie Sequist, Stout institute and Kansas State Normal school, specialist in home economics; C. H. Scholer, instructor in office of highway engineer; Miss Ceora Lanham, assistant in pageant training; Miss Mary Wright, specialist in home economics; E. M. Parrish, extension agent for negro farmers in Kansas; B. H. Branson, assistant in animal husbandry; Miss Mary A. Baird, specialist in home economics, home study service; Dr. F. W. Caldwell, Kansas State Agricultural college, specialist in veterinary medicine; Dr. John Harris, specialist in hog cholera eradication; M. W. Kirkpatrick, superintendent of Dodge City Experiment station; Irwin T. Bode, instructor and research assistant in forestry at Hays; Miss Dora M. Otto, Kansas State Agricultural college, research assistant to director of agricultural experiment station; Miss Eva Kell, assistant in registrar's office; Mrs. Flora Kirk, purveyor and storekeeper in domestic science; H. P. Wood, Kansas State Agricultural college, hog herdsman.

EAT MORE MUTTON, ADVISES ANIMAL HUSBANDRY EXPERT

When Properly Killed and Dressed, the Meat Is Thoroughly Palatable

Mutton should be used to a greater extent. It is as cheap as beef and the stewing cuts are the cheapest meats that can be purchased. Cleanly dressed mutton is just as palatable as any other class of meat and many persons think the flavor is much better, asserts A. M. Paterson, assistant in animal husbandry at the Kansas State Agricultural college.

"A whole or half carcass of lamb can be used by the average family before it will spoil," says Mr. Paterson. "Thus if a few sheep are kept on the general farm, a constant supply of fresh meat is at hand. A 70-pound lamb will dress out about 55 per cent, or 38.5 pounds. This amount of meat can be used by the ordinary family before it will spoil."

"Mutton has not been used to any great extent as food by the American people. This is due largely to the strong taste and odor caused by improper methods of killing. Spring lambs will produce cheaper meat than will any other class of meat producing animals. The sheep can be turned out in the pasture, the orchard, or any small lot in the spring and they will eat the weeds and grasses that other stock will not touch. Thus they keep the weeds down and at the same time furnish a supply of good fresh meat."

TO GET ADVANCED CREDIT BY EXAMS. NEXT MONTH

October 14 Is Date Set for Special Tests—Laboratory Work Also

College examinations for advanced credits which do not affect the first term's assignment and which have not already been taken, are to be taken on October 14. The examinations will be held by the respective departments.

All laboratory work for advanced credit is to be made up by October 14, the time and place for this to be arranged by the student with the department concerned.

The farm woodlots of the United States contain about 10 per cent of the total standing timber in the country.

TO RAISE GOOD HORSES

COMMUNITY BREEDING IS SOLUTION OF PRESSING PROBLEM

Cost of Production Runs Above Average Price Under Present Conditions—General Ideal Must Be Set and Followed

Community breeding together with a community ideal is the solution of the work horse problem, in the opinion of Dr. C. W. McCampbell, assistant professor of animal husbandry in the Kansas State Agricultural college.

"Community breeding of work horses is the only remedy for the deplorable condition existing today," says Dr. McCampbell. "The average horse is valued at \$101.60, and the

FARMING OUR STRENGTH

James J. Hill

The man who assumes to be the farmer's friend or holds his interest dear, will constitute himself a missionary of the new dispensation. It is a contribution to the welfare of all humanity. It will strengthen the pillars of a government that must otherwise be endangered by some popular upheaval when the land can no longer sustain the population that its bosom bears. Here lies the true secret of our anxious interest in agricultural methods because, in the long run, they mean life or death to future millions who are no strangers or invaders, but our own children's children, and who will pass judgment upon us according to what we have made of the world in which their lot is to be cast.

cost of production for a three-year-old horse is \$104.06. Good work horses bring higher prices than ever before, the best types selling for \$250 to \$350 a head on the open market. It behooves the farmer to give more attention to the kind of horses he raises.

DEMAND IS NOW HEAVY

"The individual can do little toward improving the horses in a community. The community ideal is an absolute necessity and when correct no other side line on the average farm returns as great profits when the proper methods of production are followed."

"The demand for high class work horses was never greater than today, yet most horse buyers working in this state will say they do not care to handle heavy horses. This is because there are so few really high class, heavy work horses in the state that it is almost impossible to collect a carload."

MARKETING COST HIGH

"Recently an attempt was made to locate a carload of sound, 1,800 pound work horses. Because they were scattered over practically half of the state the cost of getting them to market was \$100 a head."

"With a community ideal properly appreciated and followed by the horse raisers of a single township it would be an easy matter to pick up a carload of surplus, high class work horses. The extra \$100 expense would be eliminated. In this case the buyer could afford and would be glad to pay the extra \$100 to the producers."

"If everyone in a community or township were interested in the production of the same types of high class horses the problem of production would become much easier. This condition would result in a more general demand for better sires and when better sires are appreciated, more stallion owners can afford to buy and stand such sires."

Oak is the most suitable wood for carving, on account of its durability and toughness, without being too hard. Chestnut, American walnut, mahogany, and teak are also desirable, while for fine work Italian walnut, lime, sycamore, apple, pear, or plum are generally chosen.

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Number 2

BACK FAITH BY FACTS

GET DEFINITE INFORMATION ON IRRIGATION, URGES WALKER

Plants Pay When Efficiently Operated, but Many Owners Are Indifferent—Carefully Kept Records Lead to Careful Management

Irrigation in Kansas pays—and pays well—where plants are efficiently handled, in the opinion of H. B. Walker, state irrigation engineer and secretary of the Kansas State Irrigation congress, who spoke before the members at the fifth annual meeting in Larned last week.

Kansas farmers have spent approximately \$400,000 in pumping plant equipment, pointed out Mr. Walker. This does not include corporation investments. These plants, if operated to their capacity, are capable of irrigating 25,000 acres of land, but it is doubtful if 10,000 acres were irrigated in 1916.

"An investment of \$400,000 for an area of 25,000 acres is perhaps typical of what would be considered a reasonable investment for pumping plant equipment," said Mr. Walker. "Some Kansas irrigators are working efficiently and are well repaid for their efforts while others are doing very little. An effort must be made to encourage the owners of idle plants to greater activities."

DATA ARE INSUFFICIENT

"Kansas does not yet have enough data covering continuous records of pumping operations to tell definitely if the average man is successful. Information of this character is needed to put irrigation in its rightful economic place in agricultural development. When it can be shown without question that a pumping plant is a business investment for the average farmer, then it will be an easier matter to borrow money to develop pumping districts."

"During the past two years I have made investigations of more than 125 pumping plants in Kansas for the purpose of studying the methods and practices of farmers who are pumping for irrigation. These investigations were made of typical farms throughout the western third of Kansas."

"Nearly every one thinks pumping for irrigation pays, but when it comes to backing these impressions with figures to show net proceeds there is an amazing lack of definite knowledge."

FIVE PER CENT KEPT RECORD

"Among the 125 pumping plants visited less than 5 per cent of the owners actually knew in dollars and cents whether or not their plant was profitable. Many had good reasons to believe that it was a good investment, and in every instance the owners of a plant felt sure that it would pay if carefully handled. In every instance where a man had kept a record the pumping plant was a very profitable investment. This in itself is encouraging. It was noticeable, moreover, that the man who had kept a record was the most careful operator of his plant."

"Kansas farmers are going to continue to put in irrigation plants and many will want outside capital to help them in their development. How well are we fortified with facts and figures to attract the man who has money to loan on western Kansas irrigation land? My personal investigations of pumping plants impress upon me more and more how difficult it would be to offer convincing proof to an outside investor concerning the advantages of loans in irrigation pumping development. I personally feel that irrigation does or will pay, and I have faith in its development, but faith alone does not interest the man who is mak-

ing the investment. We must have this faith supported by fact.

TOO MANY IDLE PLANTS

"Judging from the records obtained on the 125 irrigated farms in Kansas at least 40 per cent of the individual farm pumping plants of the state are non-revenue producing investments. We have in Kansas approximately 225 farm irrigation pumping plants. Practically 90 of these plants are now not operated in a way which will produce revenue and the investment is so placed that depreciation is always going on. This lack of operation is not generally due to poor pumping equipment or lack of water, but it is due almost entirely to the indifference of the owner."

"It must be admitted that an efficient pumping plant is an important factor in successful irrigation but among the many Kansas idle plants are numerous first class installations. A good well with a good pump and suitable power does not insure profitable irrigation. There must be a man behind the plant consistently and persistently to operate the machinery to supply the water for the best yields."

HOW SHOULD PROTEIN BE GIVEN TO LAYING HENS?

Small Proportion of Beef Scrap with Bran, Shorts, and Whole Wheat Produces Results

Protein is essential to heavy egg production. In just what form to supply this food element is a question that puzzles many farmers, as well as townspeople, who are not in a position to grow their own feed.

Insects—in season—furnish much protein where the birds are on range. Poultry feeders have used raw meats or by-products of packing plants, known as beef scrap. As the demand has increased, the price of the latter has advanced. Now a few poultry raisers consider it too expensive and are supplying protein through vegetable sources.

Cottonseed meal is the most commonly used substitute, but where this has been given in place of all other heavy protein supplying feeds, the result has not been all that could be desired, points out N. L. Harris, superintendent of the poultry farm at the Kansas State Agricultural college. On the other hand, where cottonseed meal has been used as a supplement to beef scrap at the rate of 50 per cent of the ration, it apparently has given as good results as an exclusive meat scrap diet. On account of the bulk needed it is impossible for a hen to consume enough sour milk or buttermilk.

Ordinarily the beef scrap should constitute 10 per cent of the ration, in the opinion of Mr. Harris. Bran, shorts, and whole wheat furnish the rest of the protein needed in the ration.

FARM BUREAU HAS MEETINGS FOR DISCUSSION OF SOILS

Specialist from College and Agent Take Part in McPherson County Work

A series of 10 soil demonstration meetings has been completed by the McPherson county farm bureau. H. J. Bower, specialist in soils in the extension division of the agricultural college, assisted V. M. Emmert, county agent. Attendance was large although the meetings were held at a busy time for the farmers.

Those who attended asked for more meetings of the same nature in the near future. The local soils were studied from a collection of soil types of the county which had been previously made and were brought to the meetings.

TO PLAY BETTER PART

IRRIGATION WILL OCCUPY MORE IMPORTANT PLACE IN KANSAS

Addresses and Discussions at State Congress Are by Practical Men, Who Realize Difficulties but Know How to Surmount Them

That irrigation will play a more and more important part in the development of agriculture in Kansas was indicated by reports of actual results accomplished given by practical men at the fifth annual meeting of the Kansas State Irrigation congress at Larned September 26 and 27.

Seventy-five persons from five states and 19 Kansas counties attended the meeting. A noticeable feature was that it was freely admitted that there are drawbacks in irrigation; that the purchase of a pumping plant does not assure a fortune to the investor. In other words, the "hot air" stage in the history of Kansas irrigation is a thing of the past. It was generally agreed, however, that under proper management and conditions a good profit on the investment should be netted.

NEXT MEETING AT SCOTT

The next meeting of the congress will be held in Scott City, J. W. Lough of that place, state irrigation commissioner, having been elected president. E. J. Guilbert of Wallace and H. B. Walker of Manhattan, state irrigation engineer, were retained as vice president and secretary respectively.

Important irrigation plants of Pawnee county were inspected in the course of a 30-mile automobile trip the second morning of the meeting. The first stop was made at the state hospital, where water is lifted 18 feet from a reservoir formed by damming the Pawnee river. The pump is said to have a capacity of 4,000 gallons a minute, irrigating 100 acres. Other plants inspected were those of E. E. Frizell, retiring president of the congress, A. H. Moffet, A. L. Stockwell, and Avis Bell.

GUESTS OF EDITOR-SECRETARY

The afternoon of the same day the delegates were the guests at the Pawnee County fair, of Harry H. Wolcott, secretary, and editor of the Larned Chronoscope. Automobiles for the conveyance of visitors were furnished by citizens of Larned.

Hundreds of automobiles dotted the hill on which the fair buildings are situated. Horse drawn vehicles were conspicuous for their fewness. The fair was characterized by its excellent agricultural displays.

A. L. Stockwell of Larned in a paper on "The Growing of Silage Crops by Irrigation," emphasized the importance not only of irrigation but of careful seed selection. Irrigated kafir from carefully selected seed of a black-hulled white strain, obtained several years ago from the agricultural college, produced at the rate of 23.3 tons an acre, while kafir in the same field that was not irrigated yielded but 6½ tons.

STUDIES PUMPING COSTS

George S. Knapp, superintendent of the Garden City branch experiment station, told of the experimental work in irrigation. A study of the cost of pumping is being made, the results of which are expected to be of great value to the irrigation farmers of the state. Just how much water is required in irrigation to bring forth the greatest returns is being ascertained.

H. C. Diesem of Denver, United States irrigation engineer, gave a technical explanation of the requirements for an efficient pumping plant.

E. J. Guilbert of Wallace told of the results of some variety tests in respect to irrigated potatoes.

BETTER HOME CONDITIONS

A. H. Moffet of Larned spoke on "Better Home Conditions with More Irrigation." He advocated the windmill as a means of irrigating the home garden and making the farm surroundings more attractive.

L. L. Diesem of Garden City read a paper on the largest farm in Kansas—that of the Garden City Sugar and Land company, which comprises more than 40,000 acres of land. The company has been successful, Mr. Diesem pointed out, because of a combination of irrigation and crop rotation.

J. W. Lough, state irrigation commissioner, and new president of the congress, spoke on "Alfalfa Production by Irrigation." Mr. Lough has been particularly successful in this field of activity.

TILE DRAINAGE LINE REDEEMS MANY ACRES

Most Important Feature of System Is the Outlet, Says H. B. Walker—Fall Is Time for Construction

A simple tile drainage line, placed correctly, will redeem many acres for the farmer who has swampy land, according to H. B. Walker, associate professor of irrigation and drainage engineering in the Kansas State Agricultural college. Fall is a good time to do this work.

"The most important part of the entire tile drainage system is the outlet," says Professor Walker. "Unless there is a good outlet the efficiency of the system is more or less impaired. The trench is important and great care should be used in its construction. Ditch digging is more than just work—it is a science."

"The employment of a competent engineer to make the preliminary surveys is a money saving proposition. The trenches should be dug to the exact measurements recommended by the engineer in order to get the best possible drainage over the widest area."

"Swamp lands and fields on the hillsides that apparently have good drainage are frequently wet and unproductive because of the water that seeps up from below. This outcrop usually appears near the foot of a slope but two or more seepy places have been known to appear on the same slope. This is due to the structure of the soil. Rock ledges prevent the water from percolating into the soil, thus forcing it to follow the subsoil down the slope. The excessive evaporation that follows dries out the ground and it becomes sour and cold."

EXPECT FOOTBALL TEAM TO CONTINUE WINNING

College Fans Look for Successful Season—Game with Southwestern Will Be No Walkaway

Prospects for a football team at the Kansas State Agricultural college that will continue to win games are excellent. The 20 to 0 victory Saturday over Baker showed that there is good material in the squad, although as was expected in the first game of the season the men did not work with clock-like precision. Only one man is on the hospital list—Sullivan, the quarter—and he is expected to be back in the game this week.

"We are looking for a hard game with Southwestern college at Manhattan Friday, but we expect to win," said Z. G. Clevenger, athletic director and head coach, today. "Southwestern won from Cooper college last week and we are by no means looking for a walkaway. Taking the Baker game as a whole we made a good showing."

GO WEST AND IRRIGATE

E. E. FRIZELL ADVISES FARMING SMOOTH VALLEY LANDS

Speaker at Annual Congress Urges Diversified Agriculture—Would Start with Such Crops as Alfalfa, Sugar Beets, and Potatoes

That the smooth valley lands of western Kansas, which a few years ago were stretches of prairie country that could be purchased for a mere song, can, through irrigation and intensive farming, be developed until they are worth \$200 an acre, was the assertion of E. E. Frizell of Larned, president of the Kansas State Irrigation congress, in an address before that body at the annual meeting in Larned.

"By intensive farming," said Mr. Frizell, "I do not mean that farmers should grow radishes and lettuce and other garden truck, but such crops as alfalfa, sugar beets, and potatoes, which command good prices. After growing these crops for a few years the land will produce wheat, oats, and corn equal to or better than that grown on the high priced lands of central Illinois and Iowa. For 30 years I have been preaching, teaching, and practicing irrigation in Kansas."

DON'T GROW WHEAT ALONE

"The farmer should do more diversified farming instead of growing wheat continuously for 30 years, as we are doing in Pawnee and adjoining counties. Some of the eastern Kansas farmers have almost reached the end of their string in growing wheat, and such farmers should recoin the old slogan, 'You must irrigate or emigrate.' My advice to the young man is go west and irrigate."

We grew enough alfalfa and sugar beets the dry year of 1913 to pay the entire cost of our pumping plant. In 1915 we did not irrigate an acre. That year we needed a reversible pump to pump the water off our lands. This year irrigating is like the latest style in ladies' hats, very fashionable. It will become more so each year."

IRRIGATION IN EVERY COUNTY

"I predict the time is not far distant when every county in the state will have successful irrigating plants for growing fruit, berries, and vegetables. In the western half of the state thousands of acres of alfalfa and other field crops will be irrigated. The people of Pawnee county proudly boast of growing almost 8,000,000 bushels of wheat in one year, or 1,000 bushels for every man, woman, and child in the district, yet we are buying apples from Oregon, potatoes from Idaho, grapes from New York, onions from Texas, celery from Michigan, cabbage from Iowa, peaches from Arkansas, and sugar from beets grown in Colorado. All of these crops can be successfully grown by irrigation in Pawnee county."

"Pawnee county has 150,000 acres of smooth, level valley land underlain with an inexhaustible supply of sheet water at a depth of from 10 to 30 feet, and there are many counties in the state that have from 50,000 to 100,000 acres of similar land."

Our greatest farm land problem today is the development of the cut-over lands. Hosts of goodly spots are suffering from arrested or delayed development because we finally discovered the prairies and found them good. The ax lifted against the forests was dropped in mid-air by the pioneer home-builder when the prairies were reached, not to be lifted again until the lumberman picked it up.—The World's Work.

The bark of black oak, or "yellow oak," as it is often called on account of the color of the inner bark, is now used for dye making.

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J. D. WALTERS.....Local Editor
ADA RICE, '95, M. S. '12.....Alumni Editor

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WEDNESDAY, OCTOBER 4, 1916

WATCH THE SEED

Both seed corn and seed sorghums are scarce in Kansas this year. The corn crop was low, and while the sorghums yielded well they yielded in terms of feed rather than seed.

Because of the scarcity in this state a large amount of seed of both plants will doubtless be sent in from Texas and Oklahoma. In the shipments will be found seed of inferior quality. Such seed, no farmer should plant. Seed imported from a distance is never so good to begin with, and if in addition it is of low quality the chance of getting a crop from it is extremely slight.

Every farmer should obtain seed from as near home as possible. He should buy no seed except subject to germination test. This is of the utmost importance if seed must be purchased from outside the state. Failure to follow this practice will result in low crop yields next year.

A PROCESS OF ADAPTATION

Secretary Mohler's remarks at the state irrigation congress concerning the history of Kansas agriculture recall William Allen White's "Story of Aqua Pura," written nearly 30 years ago. In this the author divided Kansas, like ancient Gaul, into three parts—the western part "a new country—old only in a pluck which is slowly conquering the desert." Those were the days of booms followed by depression. The same methods of farming were being attempted in the Great Plains region that had been employed in places where the rainfall was always ample and at times excessive.

The line of demarcation between the different sections of Kansas in point of prosperity has been fast disappearing. It has been disappearing because of the adoption of modern methods of agriculture, adapted each to the region in which it is in use. Men realize that successful farming is a process of adaptation, not of following age-old customs. Dry farming, irrigation, and other present day practices are steps in the adaptive process.

The full realization of the necessity of adaptation in all lines of agriculture will mean greater yields and greater prosperity not only for western Kansas but for every part of the country in which it is put into effect.

KNOWING BUSINESS COSTS

Among the essentials of efficiency in any business, correct and adequate knowledge of that business is the first. That is the foundation, and the corner stone of a knowledge of that business is the knowledge of costs. But the unfortunate fact is that a large proportion of the business men of the country do not know their costs accurately. Most of the big com-

panies have good cost systems, but thousands of the smaller concerns have neither adequate nor accurate cost accounting.

Many concerns that report to the federal trade commission manufacture four or five different articles. In these reports we ask them to give us the sales of each product separately, and nine times out of ten they cannot do more than give us the total for all their products together. If they do not departmentalize their sales accounts they certainly do not departmentalize their costs; hence they make prices on particular articles without knowing what those articles cost. Since they cannot tell where they are making money and where they are losing it, they cannot tell where to introduce economies.—Edward N. Hurley, Chairman of the Federal Trade Commission.

THOUSANDS CO-OPERATE

Nearly 770,000 persons, largely successful farmers, are now aiding the United States department of agriculture by furnishing information, demonstrating the local usefulness of new methods, testing out theories, experimenting and reporting on conditions in their districts, by helping in almost every conceivable way to increase the knowledge of the department and to place that knowledge at the service of the people. This army of volunteers receives no pay from the government, but is actuated solely by a wish to be of service to their neighbors.

In a general way the coöperators may be divided into three classes: those who furnish the department with specific information acquired in the course of their regular occupations; those who demonstrate in actual practice the agricultural methods recommended by the department; and those who volunteer to perform with new crops and new methods the experiments which furnish science with the necessary data for practical recommendations.

That they believe the work of the department vital to their own affairs, is indicated by the assistance hundreds of thousands of practical farmers and business men are constantly giving.—Agricultural Digest.

KEEPING POOR COWS

It is strange with what tenacity the average dairyman hangs on to his poor cows. It is generally true that in the average herd about one-third of the cows do not pay their feed bills; another third about pay their way but make no profit; while the other third are profitable.

This being true, the average dairyman would be better off with one-third the cows he is now caring for and milking. Only the average dairyman can see the economy of milking cows that make no money or even cause a loss, but he will tell you he just must have the milk, that he can look after a large herd more economically than a small one, and a lot of similar fallacies. He cannot attend to a large herd of cows, one-third of which are unprofitable, as economically as he could the one-third which alone make any money; but he is generally dead set in his refusal to get rid of the poor cows. In fact, his fondness for keeping cows which will not pay their keep is strange, beyond understanding.

The dairyman who does not weigh the milk and keep a record of each cow's production is in about the same position as would be the merchant who didn't keep books. It must be that these dairymen don't believe that there are cows in their herds that are not paying their keep, but in that case the results are not altered, the unbelievers pay the penalty just the same.—Progressive Farmer.

A SCHOOL KITCHEN

Many country schools have now been at work for several weeks. Already we have heard of two little girls who were obliged to go home from school on account of illness. The mothers believed the cause in each case was the sudden change from warm, cooked dinners to cold luncheons.

Warm luncheons at noon for country school children are not impossible.

It has long been the practice of many city schools to have their domestic science departments serve warm luncheons, charging only for materials used. Any teacher might well undertake to serve with the children's help at least one warm dish, such as a bowl of soup. She would find a better spirit of co-operation in all lines of school work, would result from this way of working together. Such an effort doubtless would raise the standard of school work as a whole. Experiments have shown that the children who had a warm noonday meal attained higher averages in their studies. This probably was due to better health and fitness. The most ardent advocates of such an innovation should be the

possible to get help. But the truth we suspect is, that the farmer himself, and his wife and daughters, and sons maybe, want to get away from the farm and live in town. The decline of the farm is a big problem, but the decline of the farm spirit, farm ambition, farm pride, and farm love is a bigger problem.

If this is to be the treatment the old farm is going to get, deserted by those who of all others owe it protection, management, and preservation, then a different system of tenantry must prevail.

As far as we can learn not one lease in a hundred makes any adequate provision for a right system of tillage in plowing and cultivating, in the purchase of fertilizers in the rotation of crops. The owner will not give up

The Importance of Water

F. H. King

THE watering of land, which is irrigation, and the withdrawal of such part of that water as does not evaporate, which is land drainage, are two methods, one the opposite of the other; but, looked at in the broadest sense, both are natural, and each is as old as the time when the rains descended upon the first lands which rose above the ocean's level. The periodic watering and drainage of the earliest rock fragments which covered the earliest lands, and which came to be the earliest soils, constituted at once the most primitive, the most profound, and the most persistent environment to which all forms of land life have been forced to adapt themselves.

Since the very earliest forms of life probably came into being in the water, and were composed in large measure of it, it is not strange that we yet know of no forms which can live without water, and to which, indeed, water is not the most fundamentally important substance and food. It is so, not more because it makes up so large a part by weight of all living and growing parts of plant life, than because it is the medium in which the transformation of the crude materials into assimilable food products takes place, and through and by means of which these products are transported to their destinations at the various points of growth. It is only when we fully appreciate the important role played by water in crop production, that we are in position to see how necessary to large yields is the right amount of water at the right time, and thus be led to insure to our crops a sufficient irrigation and an adequate drainage.

mothers who wish above all to have strong healthy children.

We have the subject of furnishing a school kitchen under discussion in our district. We expect to continue our get-together meetings. At the first one, we shall plan definitely the equipment of the kitchen. It probably will be a part of the main room curtained off by a screen. We know of one school in which the boys made cupboards from large boxes. A school entertainment provided the means for buying an oil stove and a few kettles and pans. Suggestions for making a fireless cooker were found in a farmer's bulletin. The teacher was well enough acquainted in her district to know what every child could bring. This enabled her to give a definite assignment for every day.—Mrs. Dora L. Thompson in the Farmers Mail and Breeze.

THE PROBLEM OF THE FARM

Every farm is a problem in itself. Every farmer is a problem solver in proportion as he is an earnest student of his own farm. The difficulty does not lie so much in the farm as it does to get the right kind of a man, a man endowed with the true student spirit, at the head of it. One of the most serious causes for the decline of fertility and the run-down character of farms, everywhere, is the fact that the owners have practically abandoned them, gone into town to live, leaving them to tenants to manage.

No other business has this setback feature at work eating out the very vitality of its existence. A big percent of these retired farmers should never have left the farm. If they felt like giving up some of the hard work they should still stay on the farm and look after it, see that justice is done it. The claim is made that it is im-

any of his revenue for that purpose, and the tenant certainly will not. This situation lacks brains, lacks the merit even of a wise selfishness on the part of either of the contracting parties. The owner has taken upon himself the burden of increased cost of living; the tenant is given no encouragement to spend time or money for the benefit of the farm and so down the road to ruin goes the farm, the victim of the selfish stupidity of two men, whereas formerly it had but one to contend with.

As we view this problem of absenteeism on one hand and destructive management on the other, there are only two ways out of the difficulty; either sell the farm or lease it on longer time, with sufficient concessions to the tenant so he can have fair encouragement so to manage it as to conserve and increase its fertility. If he is given a five or ten year lease, it is to his interest to keep up the farm. If his lease is for only one or two years it is for his interest to rob it all he can. Just as long as the present brainless system of farm management continues, as between owner and tenant, there is no escape from a widespread destruction to the farm.—Hoard's Dairyman.

The value of tar, ammonia, and benzol products recovered in the manufacture of artificial gas in municipal plants and at by-product coke ovens in 1915 was nearly \$25,000,000.

The stand of timber on the two great national forests in Alaska is estimated by the forest service at more than 70,000,000,000 board feet, while the annual growth will, it is said, produce of pulpwood alone enough for the manufacture of 3,000 tons of wood pulp a day.

TREES

Joyce Kilmer

I think that I shall never see
A poem lovely as a tree.

A tree whose hungry mouth is prest
Against the earth's sweet flowing
breast;

A tree that looks at God all day,
And lifts her leafy arms to pray;

A tree that may in summer wear
A nest of robins in her hair;

Upon whose bosom snow has lain;
Who intimately lives with rain.

Poems are made by fools like me,
But only God can make a tree.

SUNFLOWERS

After all, the best way to hold your
age is to turn loose of it.

A SAD PARADOX: Flat-headed people
never have broad minds.

Cheer up, little girl. You will be
old enough to wear short skirts some
day.

Somebody ought to write a good,
snappy song about the other end of a
perfect day.

Thank goodness, the Eternal Order
of Fathers and Mothers has never agitated
the eight-hour day.

BULLETIN: Very little hope is entertained
for the recovery of the young
man who has his shoes and his finger
nails shined by experts.

Some picture playhouse owner can
easily make himself famous by installing
a sound-proof apartment for fat
women who know how the scenario is
going to turn out.

BRAVE LUCILLE*

Lucille is neither tall nor stately,
But she wears biased stripes sedately.
I never would have noticed that
Had she not been so plaguy fat.

*In justice to the envious young
thing who submitted this we wish to
state that it is written in bucolic pedo-
meter and is not to be scanned without
permission of the author and publishers.

A QUARTER CENTURY AGO

Items From The Industrialist of October 3, 1891

The college battalion was organized
last week.

W. W. Hutto, '91, teaching in St.
George, visits friends at the college
today.

B. Buchli, '84, is the People's party
nominee for surveyor of Wabaunsee
county.

Miss Flora Wiest, '91, has gone to
St. John to spend the winter on the
farm with her father.

A cheering rain during most of
Thursday gladdened the hearts of all
interested in farms and homes.

Professor Willard has delivered
the lectures in chemistry this week during
the absence of Professor Failyer.

Bulletin 24 is now ready for the
printers. It will be the first from the
veterinary department of the station.

The back rows in chapel are gratified
to be transferred on Fridays to
seats in the gallery where it is possible
to hear distinctly.

Mrs. E. L. Knostman called on
Monday to show her uncle and aunt
from Indiana the many improvements
made since their last visit, two years
ago.

Professor Walters delivered an address
in German at Wamego on the
afternoon of October 6 before a gathering
of German citizens on one of the
days of the fair.

S. N. Chaffee, '91, called at the college
on Saturday. As nominee of the
People's party for county clerk, he
thinks he will not be "snowed under"
beyond hope of rescue.

E. T. Martin and G. J. Van Zile,
both of '90, stepped upon the platform
at the U. P. station yesterday to greet
friends while passing on the way from
Denver east. There was not time to
answer the question, "Where are you
going?"

AMONG THE ALUMNI

W. T. Brink, '16, is on the staff of the Topeka State Journal.

Miss Virginia Sherwood, '12, is principal of the Codell schools.

J. S. Wood, '16, is with J. J. Williams and Son, polled Durham breeders, Grandview, Iowa.

Miss Ruth Aiman, '15, is instructor in domestic science in the Faribault (Minn.) high school.

The Rev. Dr. Oliver L. Utter, '88, is pastor of the Methodist church in West Mansfield, Ohio.

Miss Nell Beaubien, '16, is taking work in home economics and journalism in the University of Wisconsin.

Vard Worstell, '14, is director of agriculture in the North Dakota State Agricultural high school at Carrington.

Miss Vida Harris, '14, has resumed her work as teacher of domestic science in Tillotson college at Austin, Tex.

Miss Mayme Houghton, '91, is employed on the library catalogue. Her school at Cleburne does not begin until December.

R. F. Mirick, a senior civil engineering student, is working with the interstate commerce commission, division of valuation.

Earl R. Harrouff, '16, is assistant chemist for the C. R. Cook Paint company, Kansas City, Mo. His address is 3124 Summit street.

Albert F. Yeager, '12, writes that he is enjoying his work in the horticultural department of the Pennsylvania State college, where he accepted a position a few weeks ago.

William Marshall, '15, will finish his theological studies in the seminary of Boston university. In addition to his studies he has charge of the Methodist church at East Kingston, N. H.

S. A. McWilliams, '10, is visiting in Manhattan. For some years Mr. McWilliams has been with the United States reclamation service and is at present located on the Milk river project in Montana.

The Hon. Edward Secrest, former regent of the college and father of six graduates of the institution, has a recent article in the Manhattan Nationalist on "Scraps from the Casket of a Pioneer's Memory."

Mrs. Kate (Zimmerman) Grigsby, '00, is living at Taft, Cal., where Mr. Grigsby is teaching in the high school. Taft is about 50 miles from Bakersfield and in one of the greatest oil fields in the world. There are more than 5,000 people in the town, most of them living in newly built hotels.

John S. McBride, '14, who is teaching mathematics and science at Lovewell, Jewell county, and H. F. Tagge, '14, who is teaching botany and chemistry at Globe, Ariz., were recent visitors at the college. They are both going back to their work at increased pay. Both are talking of taking master's degrees.

G. B. Griffing, '04, head of the agricultural department in the Arizona Normal school at Tempe, was in Manhattan for a few days visiting friends and noting the improvements in the college. Since his graduation he has done several years of university work. He holds the degree of master of arts. He was recently elected to the chair of agriculture, Nanking, which is the southern capital of China.

S. F. Babcock, professor of agriculture in the Missouri State Normal school at Cape Girardeau, was a visitor at the college recently. His department has grown until he now has an assistant in animal husbandry and an assistant in horticulture and is teaching classes in soils and crops. He is a graduate of the University of Kansas, class of '01, was a special student here in 1900, and still retains an ambition to finish the course and receive a degree in agriculture.

MARRIAGES

PRIEST-LUCAS

Miss Ina Priest, '13, and Mr. Harry Irvan Lucas were married August 29 at Juneau, Alaska. Mr. Lucas is cashier in a bank there.

ENYART-ECKARD

Miss Blanche Earl Enyart and Mr. William Harry Eckard were married June 17 in Kansas City, Mo. They are at home at Moberly, Mo. Mrs. Eckard was formerly in charge of physical training for women in the college.

ADAMS-TAGGE

Miss Elsie Adams, '13, and Mr. Herman F. Tagge, '14, were married July 19, at the home of the bride in Manhattan.

Mr. and Mrs. Tagge are at home in Globe, Ariz., where Mr. Tagge teaches in the high school.

GATES-McCLINTIC

Miss Carrie M. Gates, '10, and Mr. A. C. McClintic were married at Green Meadows farm near Asherville, August 16. The Rev. L. B. Parker, pastor of the Beloit Baptist church, officiated.

Mr. and Mrs. McClintic are at home in Beloit, where Mr. McClintic is in the real estate and insurance business.

DEATHS

LEWIS A. SALTER

Lewis A. Salter, '79, died at his home in Carmen, Okla., August 2. He was 58 years old. He leaves a wife, Mrs. Susannah Kinsey Salter, who is a former student of the agricultural college, and eight adult children.

Mr. Salter was a lawyer but later was engaged in newspaper work, establishing the Augusta (Okla.) Headlight in 1900. He was a veteran of the Spanish-American war. He was a member of the Baptist church.

LYMAN TO CHINA

Charles W. Lyman, '96, was in the city Tuesday on his way from Topeka to Shanghai, China, where he and his family expect to spend the next three years. Mr. Lyman will investigate the poultry industry in the far east, with the expectation of introducing more modern methods than those now in use. He will be connected with the Amos Bird company, and will be glad to hear from any former students or friends of the college in China.

FROM ALASKA ALUMNUS

To the Alumni Editor of THE INDUSTRIALIST:

I am in thorough accord with the students' loan fund project and am inclosing my check for \$20.

THE INDUSTRIALIST is a great little paper, brimful of useful and interesting items. It is the first paper opened and the alumni column the first to be read.

Should any alumni pass through this way they must not fail to come across the river to the station. We grow some farm crops as well here as they can be grown even in good old Kansas.

Very truly,

G. W. GASSER, '05.

Rampart, Alaska.

SWEEPING COMPOUND MADE BY COLLEGE FOR OTHER SCHOOLS

Waste Material Is Used, and Student Janitors Help Mix It

Sweeping compound manufactured at the Kansas State Agricultural college is being supplied to other state educational institutions. Orders for this material from the University of Kansas and the State Normal school at Emporia were recently filled.

Ingredients used are sand, sawdust, oil, coloring matter, and disinfectants. Because most of the sawdust is obtained from the college shops, the cost of making the compound is comparatively small. R. H. Needham, associate in stock remedy analysis, agricultural experiment station, suggested the advisability of putting waste material to use.

G. F. Wagner, custodian, is in charge of the plant. Several of the students who are employed as janitors assist in the preparation of the compound.

DAIRY FARM IS FERTILE

LOSS OF FOOD LESS THAN IN OTHER TYPES OF AGRICULTURE

When Exclusive Grain Growing Is Practiced, Depletion of Soil Is Bound to Be Felt Before Long—How to Add Humus

Farms used for dairy purposes should gain rather than lose in fertility, asserts R. I. Throckmorton, assistant professor of soils in the Kansas State Agricultural college.

"In dairying less plant food is sold from the farm than in any other type of farming," says Mr. Throckmorton. "In grain farming, the land is cropped year after year, and the products are sold off the land. In dairy farming, the crops are harvested and fed to animals.

"When grain or other crops are sold from the farm soil fertility or plant food is removed. No soil can grow crops year after year without sooner or later reaching the point where the depletion is felt.

FOOD STAYS ON FARM

"When animals or milk products are sold only a small portion of the plant food of the crop is removed from the farm. The greater part of it is left in the form of barnyard manure, which may be returned to the soil. This is clear when one considers the fact that a ton of milk contains \$2.09 worth of plant food, while a ton of alfalfa contains \$9.50 worth of plant food.

"With this system of farming a large variety of crops can be profitably grown and utilized. Such crops as alfalfa and clover for hay, corn sorghum for silage, and rye as a soiling crop may be grown. With these crops it is possible to practice a rotation in which a legume is grown, thus increasing the supply of nitrogen in the soil. This is important as the failure to include a leguminous crop in the rotation is one of the common causes of soil depletion. The nitrogen content of the soil is also increased when alfalfa is fed and the manure is applied to the land."

CONCENTRATES ARE FERTILIZERS

The soil on many farms contains a sufficient quantity of plant food, points out Mr. Throckmorton, but is so devoid of humus that the food is unavailable to the plant. A soil thus lacking in vegetable matter will not retain water, but packs, and bakes. Practically all the manure produced on a dairy farm may be returned to the soil. This will add humus, thus making the soil more productive. It may be profitably applied to alfalfa as a surface dressing or in the field where silage or soiling crops are grown.

Buying concentrated feeding stuffs, such as bran and oil meal, is a common practice on many dairy farms. These feeds are rich in fertilizing ingredients and if the resulting manure is applied to the land the fertility may be increased to a considerable extent.

WILL YOU EVER BE A BIG BANK PRESIDENT?

Answer Depends on Whether You Do More Than You Have To, Says Frank Vanderlip

The man who is satisfied with an eight hour day restriction is not the type of individual who will succeed in life, according to Frank Arthur Vanderlip, president of the National City Bank of New York, and authority on matters of finance, who spoke Friday before the student body of the agricultural college.

"Restriction of production is a limiting factor," said Mr. Vanderlip. "You are not looking for eight hours a day. The man who succeeds is not bound by such rules as that.

"Efficiency of production is what society needs. A good many workmen do not recognize that they owe to society efficient work. You are going to advance society by going back to the farm and adopting scientific methods. We must have more scientific agriculture and more economical production.

"Your understanding of common things prepares you for business, industrial, and scientific life. You have a great responsibility. Nowhere would I rather look to success of any sort than in a group like this.

"Whether there is a future president of a great bank in this group is largely up to you. It depends upon whether you have a keen interest that is leading you to do more than you are required to do."

TO TAKE TWO PHOTOS ON A SINGLE FILM

Waldo F. Heppe Invents Important Device for Cameras—Broadens Field of Picture Making

A device for film cameras enabling one to take two pictures on a single film has been invented by Waldo F. Heppe, a junior in animal husbandry in the Kansas State Agricultural college.

The device is simple in its make-up and can be readily attached to the ordinary camera using film pack or roll films, for which it has been expressly designed. By means of this device, the operator can take two exposures on a single film, each picture being half the size of the film.

The operator has his choice of a full size picture, or a smaller, half size picture of an object, or of two pictures of the same object on a single film. The value of this device to the owner of a camera is recognized at once by those who have seen its many advantages, and by them it is praised highly.

"This 'two-in-one' camera device broadens the field of photography by adapting itself to every need of the camera owner," says Mr. Heppe. "It stimulates a greater interest in picture taking by enabling the owner of a large camera to take small, wayside pictures which he would otherwise pass by.

"This device enables one to take different poses of the same person on a single film and print them on one operation, thus making possible a combination of comic or clever pictures. The device is distinctive in offering a means of comparisons, as for example, front and side and top and side views of the same object. It permits of the printing of two pictures of the same object at a single operation, the two exposures on a single film being treated as one."

SMALL ARMY OF STUDENTS LEARNS MILITARY SCIENCE

Total Number at Drill Is 848—Cadet Officers Are Announced

A small army of students—848 to be exact—is studying military science and tactics in the Kansas State Agricultural college.

Appointment of officers has been announced by L. O. Matthews, commandant, who ranks as captain in the Fourth United States infantry. Here are some of them:

Lieutenant colonel, F. M. Pickrell, Manhattan; major first battalion, K. E. Kenyon; major second battalion, H. R. Horak, Munden; captain company A, F. N. Jordan, Manhattan; captain company B, O. T. Bonnett; captain company C, T. R. Pharr; captain company D, G. E. Manzer, Manhattan; captain company E, N. Pearson, Manhattan; captain company F, I. O. Mall, Manhattan; captain company G, A. L. Willis, Manhattan; captain company H, W. E. Patterson, Yates Center; captain company I, W. G. Bruce, New York City; captain company K, E. T. Whitcomb, Cedar Point; captain company L, F. K. Hanson.

Ray Allen, for the past two years instructor in zoology in the agricultural college, now assistant in the same subject in Cornell university, is author of "Laboratory Guide to General Zoology." The volume, which contains 150 pages, and was printed in the college shop, will be used in the class work here this year.

KEEP SCHOOL HOMELIKE

BOUQUETS DELIGHT CHILDREN AND DEVELOP THEIR TASTE

There's Decorative Material in Gardens and Woods for Every Month in the Year—How to Make Plan of Educational Value

Children love flowers, and in the country, especially, often bring them to the schoolroom. Through the coöperation of the teacher this instinctive activity may become the source of perennial delight and of growth in power to produce beauty.

"A place should be reserved upon the teacher's desk, or on a stand or shelf, where the light falls at a favorable angle for the display of good flower arrangements," says Miss Araminta Holman, instructor in home art in the Kansas State Agricultural college. "Such arrangements will include not only flowers in the ordinary sense, but all the beautiful decorative material the plant world affords.

NEXT MONTH—AUTUMN LEAVES

"In October the asters and the ripened leaves of rich color should appear in the school room; in November sprays of seed pods and of late fruiting shrubs; in December sprays of the evergreens.

"During the other winter months, sprays from bushes and trees which retain seed packs and dried leaves will furnish rare bouquets.

TEACH ARTISTIC ARRANGEMENT

"All these should be selected and arranged with the utmost care, in appropriate receptacles, that they may be seen to the best advantage. The children should assist in this to the fullest possible extent. Some teachers appoint committees, of two pupils each, to procure and arrange bouquets. Each committee must be able to give good reasons for its selection of the vase and for the way the sprays are adapted to it in both form and color.

"In early spring pots of crocuses, hyacinths, and tulips nurtured by the children indoors will precede the bouquets of wild flowers. Lastly, in April, May, and June will appear sprays of the blossoms of trees.

"The children should be led to see the wisdom of certain generalizations concerning flower arrangement. A group should be limited to one kind of flower and its foliage. Sprays look best when arranged in positions which suggest their natural growth."

NEED NOT TAKE UP FADS IN ORDER TO DRESS WELL

Woman Should Select Conservative Materials and Styles, According to Domestic Art Specialist

The slavish following of fashion does not make the well-dressed woman, in the opinion of Miss Florence L. Hunt, assistant in domestic art in the Kansas State Agricultural college.

"By taking up the fads and novelties in dress, a woman loses style and becomes merely stylish," explained Miss Hunt. "She defeats the purpose of true style, which is to be inconspicuous, and becomes noticeable by the very means she takes to look well."

The well-dressed woman selects materials and modes that are conservative, skilfully adapting fashion to her needs so that her clothes are in style as long as they last instead of just for a season, points out Miss Hunt.

In this way one may not only look well but may help in reducing the high cost of living since faddish things often cost many times their real value. The merchant is obliged to charge several times the cost price on articles that are likely to have a short popularity in order to pay for those left on his hands when they are out of fashion.

It is to the advantage of the merchant, the tailor, and the dressmaker to invent short lived fashions in clothing in order to increase custom by tempting women to buy.

Grazing experts of the United States forest service estimate that the cost of producing lambs in the Northwestern States is \$1.82 per head.

WESTERN KANSAS EMPIRE OF UNMINED RICHES—MOHLER

SECRETARY OF STATE BOARD OF AGRICULTURE TELLS IRRIGATION CONGRESS HOW LINE OF FARMING HAS MOVED INTO GREAT PLAINS AREA

"Western Kansas is a vast empire of unmined riches and a land of opportunity," asserted J. C. Mohler of Topeka, secretary of the state board of agriculture, in speaking before the Kansas State Irrigation congress in Larned.

"At one time prominent men in the affairs of Kansas asserted that the soil west of Emporia would never feel the cold steel of the ploughshare, so little did they appreciate the western country from a farming viewpoint. But as they saw the sod broken beyond that point and subsequent yields, Newton was named as marking the furthestmost western line of agriculture.

"When Newton was reached in the onward march, our doughty prognosticators retreated to Hutchinson, and from there they have retired to Great Bend, and later to Larned, and now I think there is none in the state acquainted with the western country but will grant that farming may be made to pay handsomely all the way to the Colorado border, and even lap over some. In fact those who know the country best are confident that greater opportunities are found in this region than in any other part of Kansas. And there is much merit to these claims, considering the price of lands and their fertility.

ONE COUNTY BESTED STATE

"We hear frequent reports of farmers raising crops in a single season worth more than the market value of the farm that produced them. To be wholly truthful we hear, too, of seasons when farmers in some parts raise little or nothing. This, however, is attributed generally to the method of farming, and reflects on the man rather than on the country.

"Twenty-five years ago there was comparatively little farming done in western Kansas. This part of the state, especially, had been misrepresented. It ought to do your hearts good to see your faith in the country justified. But, many of you who have been in the tide, helping develop its resources, likely have only a small conception of what has been accomplished. Did you know that the 46 counties comprising the western part of this state produced more than 93,000,000 bushels of wheat in 1914, worth about \$93,000,000? This is a greater yield of wheat than was produced in North Dakota, Nebraska, Oklahoma, Illinois, Missouri, Minnesota, or, in fact, any of the states outside of Kansas during 1914. One county produced nearly 7,000,000 bushels, two counties more than 5,000,000 each, and Ellis county yielded more than the state of West Virginia that year.

IRRIGATION HAS LONG HISTORY

"To the other advantages of western Kansas we must add that of irrigation. There is little, if any need, to dwell upon the importance and value of water in sufficient quantities at proper intervals for maximum crop productions. It is because of the control over these two factors that irrigation farming is often referred to as the ideal agriculture. When, in this connection, one takes into consideration the wonderfully fertile soil and favorable climate characteristic of regions needing the touch of water to proclaim their wealth of resources, the tremendous significance of irrigation is made the more apparent. Sufficiency of moisture is the only essential lacking in such territories to development of most productive and populous countries.

"The advantages and desirability of artificially watering lands in western Kansas were early realized, and the history of irrigation on the sunset side of the Sunflower state reaches back many years. Then, the sources of water supply were principally the direct flow of rivers. These, however, were disappointing because when most needed water was lacking. The miles

and miles of main ditches and laterals were abandoned, and the millions of dollars originally invested were irretrievably lost.

POSSIBILITIES IN PUMPING

"In recent years, however, some of these pioneer canals in the Arkansas valley have been rehabilitated and used for winter irrigation from the direct flow of the river, and also at other times when water is available and needed, and from reservoirs in which the flood waters are stored. Likewise, the so-called underflow may be more or less brought into requisition for watering land under some of these old time and unused ditches.

"The later developments, however, indicate great possibilities in the utilization by pumping of the vast stores of underground waters available throughout this region at various depths.

"Unless one stays right on the ground out here, he is likely to get out of touch with the situation, for progress is made so rapidly. I do know, however, that the increasing wells puncturing the buried water supply are scattered for 200 miles north and south. These verify the long-held belief that the water-bearing strata extend from one side of the state to the other. That Kansas is awakening to the tremendous possibilities that repose in its subwaters is shown not only in activity in driving new wells in recent years but also in the revival of the irrigation congress and the enactment of laws calculated to develop this invaluable resource more rapidly. These signs have only one meaning—that Kansas is alive to its opportunities and is bent on exploring and making the most of this underground treasure.

PROTECTS IN HUMID REGIONS

"Irrigation is so valuable an aid to agriculture that it should be employed wherever possible, even though not an absolute necessity. Even in humid regions there are those who are installing irrigation plants to protect themselves against dry weather.

"Western Kansas people no longer consider it an affront to the country to associate irrigation with its development. There was a time when they resented the idea, claiming that the precipitation that came from the clouds was sufficient for profitable agriculture. And so it was oftentimes, but not always for maximum yields. Since they have found a way of profitably lifting the underground water which is inexhaustible, opinions are being revised. They have learned that irrigation pays big dividends and that it is insurance against dry weather every year."

While the possibilities of the subwaters of the plains for irrigation have never been lost sight of in the last 30 years or more, pointed out the speaker, they could not be extensively utilized because of the difficulty of lifting the water to the surface in sufficient quantities at a cost that would warrant. This difficulty, however, seems to have been removed and the problem in a fair way of being solved. The putting down of large wells through the water-bearing gravel, with centrifugal pumps and powerful engines burning cheap oil, has accomplished the desired result. In this way the water is being brought to the surface in immense streams.

DOUBLED IN SIX YEARS

This is all of comparatively recent development, and as time goes on improvements in machinery are reducing the cost of pumping, while methods of handling water are coming to be better understood. The progress that is being made was shown in statistics presented by Mr. Mohler. According to the United States census of 1910 there were 37,480 acres irrigated in Kansas; now, there is nearly twice as much, if not more, and experts declare

that there are probably two and one-half to three million acres in the western half of Kansas where water may be encountered at 60 feet or less. It has been demonstrated, Mr. Mohler stated, that water may be profitably lifted from that depth, while many are optimistic that it may be drawn much greater distances with profit.

While a great variety of irrigated crops may be grown under irrigation, perhaps the one best adapted generally is alfalfa, in the opinion of Mr. Mohler. The soil and climate are admirably suited for this legume.

"There is an economy in growing alfalfa," continued the speaker, "because of its long life. Yielding luxuriantly for years from a single seeding, the expense of its production is comparatively small. Its beneficial effects on the land in which it grows is another point in its favor not to be overlooked. All in all, it is the greatest farm forage and soil improver of any plant known to agriculture.

ALFALFA IS BEST CROP

"Alfalfa is doubtless better adapted to some types of soils than others, and it is a happy circumstance in connection with irrigation in Kansas that climate and soil favor a diversity of crops. Another advantage of this is that water may be distributed at various seasons. While alfalfa is probably the one best crop, if one had to make that distinction, there are many others that may be and are profitably grown. Take sugar beets for example. Conditions were so well suited for their raising, under irrigation, as to justify the Garden City Sugar and Land company in erecting a sugar mill at a cost of \$1,250,000. Wheat, kafir, oats, corn, barley, and garden truck yield abundantly. You know the crops and methods better than I do.

"It seems to me that under irrigation this western land should be excellently adapted to fruits and vegetables, and that profit should be found in their raising. As it is, we get our onions from Texas, our potatoes from Colorado, our celery from Michigan, our grapes from York state, and apples from the northwest, and it takes a goodly portion of our wheat to pay for them. Many of these commodities, and others, that we import in such large quantities might be produced in this region to our very great advantage.

IRRIGATE GARDEN PATCHES

"Every homestead in western Kansas should at least have its windmill and reservoir for irrigating a garden patch. A large portion of the subsistence of every family of the prairies of our western counties could thus be provided regardless of the seasons. Under this plan, for example, a Gove county farmer produced on a half acre cucumbers, onions, potatoes, pumpkins, and sweet potatoes worth \$87. After supplying home needs there was a surplus of vegetables for sale, which brought in \$20.

"It is hoped and believed that the operation of the federal farm loan act recently passed by congress may have a wholesome influence on the fortunes of this western country. Under this new law there appear to be large opportunities for expanding and upbuilding the farming industry because of the present undeveloped state of its agriculture. In the past capital has not been available on terms favorable for such enterprises. A drawback to rapid general development has been a lack of capital among the farmers, many of whom are referred to as land poor; that is, own a great deal of land without funds to develop their holdings. As the pressing need is for money, it seems entirely probable that this new measure may fulfil that requirement. If so, a great transformation may be looked for, and one of the most fruitful soil areas of the continent will be the result."

The Fruit Grower contains an illustrated article on "The Way Kansas Does." The article takes up the way in which the state encourages the growing of good apples and gives high praise to the work of the agricultural college and the county agents.

TO GET SURE RECORDS

COW TESTING ASSOCIATION MAKES CERTAIN OF ACCURACY

One-Third of Kansas Cows Don't Pay for Their Feed—Between 300 and 400 Animals Are Necessary to Make Organization Successful

The cow testing association affords the cheapest and most satisfactory method of getting accurate records of the production of dairy cows, according to O. E. Reed, professor of dairy husbandry in the Kansas State Agricultural college.

"To establish an association and run it cheaply and effectively," says Professor Reed, "it is necessary to have between 300 and 400 cows distributed among about 26 herds within a convenient radius. Each member of the association is assessed from \$1 to \$1.50 a cow. This money is used to hire one man to do the testing and to defray the running expenses of the association. Each herd is visited once a month by this man, who makes the fat tests and has charge of keeping the milk and feed records. From the monthly records, the yearly records are calculated. From the amount of feed consumed, the value thereof and the amount of milk and butter fat produced, one can pick his profitable cows.

COMPETENT TO SUGGEST

"The man who does the testing is always one who has had considerable experience in the dairy business and much valuable information and advice can be obtained by the farmers from him.

"The principal advantage of the cow testing association is the obtaining of an exact record of each cow in the herd. A conservative estimate is that about one-third of the cows in Kansas do not pay for the feed they eat. Cows of this sort are worse than boarders, for they eat up the profits made by the good cows. There is a great opportunity to increase the net profits of the average herd by spotting the poor cows and discarding them.

DON'T FEED ALL ALIKE

"Moreover, knowing the record of production of the cows in a herd enables one to feed them more intelligently. It is a common practice to feed all the cows in a herd alike. Under these conditions the poor cow would be fed too much and the good cow too little. The proper way to feed each cow is in proportion to the amount of milk she produces. When this plan is adopted it usually results in a greater production of milk on less feed.

"A record taken by a man regularly employed for that purpose has greater value than a private record when one desires to sell an offspring or an animal of the herd.

"A testing association often leads to community breeding, which means that a part or all of the members decide to handle one breed of cattle. They may cooperate in buying or selling breeding stock, or may trade herd sires and thereby reduce expenses. Continuous breeding of a definite breed in a community soon establishes a center for that breed. Buyers will be attracted to this community and all surplus stock can readily be sold.

"When one desires to make official tests, it can be done with less expense through the cow testing association."

KEEP AWAY FROM FREAK PLANS AND MACHINERY

Chester Carter Points Out Developments in Pumping Plants—Concrete in Extensive Use

Keep away from freak ideas and freak machinery, was the advice of Chester Carter of Garden City, a graduate of the agricultural college, who read a paper on "Recent Developments in Pumping Plant Installation," before the Kansas State Irrigation congress.

"Probably the most striking change, and the one which would appeal to the casual observer," said Mr. Carter, "is the general improvement of the looks of pumping plants and their permanent character.

"As in all other branches of building and construction in the last few years, there has been a decided tendency towards the use of concrete in every place possible. In very few plants of recent construction will one find the old frame house and the old style wooden curb in the well, or the unsightly rattletrap galvanized iron or wooden discharge box.

"In nearly all these plants the pump has been placed in a neat and substantial concrete pit, and the pump and motor, or engine, housed in a solid and permanent looking house constructed of concrete blocks.

"A great deal of this improvement in the appearance of the completed pumping plants can be traced directly to the present attitude of the owners rather than to those who are installing plants. The owners no longer look upon the installation of a pumping plant as a doubtful investment but realize that they are increasing the value of their land by at least \$50 an acre and that they are installing something which by proper installation and care may be made to last a lifetime and by proper handling may be made to pay big returns on the investment. They therefore insist that they get efficient plants which will add to and not detract from the appearance of the land."

THERE ARE MANY WAYS FARMER MAY CO-OPERATE

Butchering, Hauling Cream, Taking Children to School, Are Among the Opportunities

Many farmers are making a success of cooperative buying and selling but generally are not mindful of the fact that cooperation in butchering, hauling milk and cream to market, handling the weekly or semiweekly case of eggs, and taking the children to school in stormy weather can bring about a saving in time and money, according to W. E. Grimes, assistant professor of farm management in the Kansas State Agricultural college.

One of the most important features of cooperation among farmers is the creating of more enjoyable farm life. Betterment of the conditions of the roads and community in general serves to bring the farmers closer together and eliminate the drudgery of rural life, says Professor Grimes.

Eleven farmers living within seven miles of Manhattan clubbed together to haul ice from a Manhattan ice plant. They got a reduced price because of the quantity purchased. Ice was taken to the house of each farmer and placed in his refrigerator twice a week. It took half a day for the farmer who made the trip. Each man took his turn. In the course of the summer each man made three trips. The ice was bought for less than it would have cost the farmer to put it up, and then there was no digging in wet straw in the home ice house.

WRITES SECOND EDITION OF VOLUME ON POULTRY

Lippincott Is Author of Work Used in 35 State Institutions—Book Is Comprehensive

The second edition of "Farm Poultry Production," by W. A. Lippincott, professor of poultry husbandry in the Kansas State Agricultural college, is off the press. The work is comprehensive and will be used as a text book in 35 state institutions this year. Much valuable material has been added.

Professor Lippincott, who is recognized as an authority on poultry, is now at the University of Wisconsin on leave for a year. He will study genetics with special reference to poultry under Dr. L. J. Cole, professor of experimental breeding.

Ross M. Sherwood, specialist in poultry husbandry, has charge of the department in the agricultural college in the absence of Professor Lippincott. He is assisted by F. E. Fox and T. S. Townsley.

One ton of coniferous wood waste will produce from 15 to 25 gallons of 190-proof alcohol.

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IT PAYS TO FARM WELL

INTELLIGENT METHODS MAKE DEFINITE PROFIT FOR OWNER

Good Crops and Live Stock Combined Add \$400 to \$600 a Year to Labor Income, Points Out Dean Edward C. Johnson

It pays to farm intelligently. Demonstration surveys on more than 600 farms conducted by farm bureaus and the Kansas State Agricultural college prove conclusively that the farmer who excels his neighbors in crops produced receives anywhere from \$150 to \$600 more each year for his labor.

"If the farm business is of good quality, other things being equal, it will be much more profitable than if lacking in this respect," says Edward C. Johnson, dean of the division of extension, Kansas State Agricultural college.

"By good quality is not meant excessively high yields of crops or exceptional production of stock. It does mean, however, yields that are a little better than the average for the community; cows that give more milk than the average cow; and beef cattle, hogs, and horses of more than average productiveness.

RECORDS GIVE EVIDENCE

"The Kansas farmer who excels his neighbors in the crops produced, makes on the average \$150 to \$200 more each year for his labor than the average farmer. The farmer who excels in productiveness of live stock receives \$250 to \$300 a year more for his labor than the average farmer; while the farmer who excels in both crop yields and productiveness of live stock makes \$400 to \$600 a year more than the average."

These facts can be demonstrated by the records of the farm business in practically any community in the state and have been brought out clearly by farm bureaus and the agricultural college in demonstration surveys on more than 600 farms in Kansas as well as similar surveys in other states throughout the country.

"It is clear," comments Dean Johnson, "that the farmer who has a business of considerable proportions, such as a well equipped, diversified farm of 160 to 240 acres, can improve his income very considerably by giving more attention to the maintenance of soil fertility; to the securing of better crop yields; to the selection of better dairy cows, or to the better breeding and better feeding of beef cattle, hogs, horses, and sheep."

AGGIES TO PUT UP REAL BATTLE AT NEBRASKA

Team Is Encouraged by Big Score Over Southwestern—Chance for Victory Saturday

Encouraged by the 53 to 0 victory over Southwestern college last Friday, members of the Aggie football team will go to Lincoln with the determination to put up the kind of a battle against the Cornhuskers that wins games.

Z. G. Clevenger, director of athletics and head coach, believes there is a chance to win—just an outside chance. It will be the hardest game of the schedule, he thinks.

The team did not suffer as a result of the effort of piling up a big score last Friday. Sullivan, the quarter, who was injured early in the season, is expected to be in the game next Saturday.

COLLEGE STOCK TAKES MAJORITY OF PRIZES

Wins More Than All Competitors at American Royal—England First in Judging Contest

Kansas State Agricultural college steers won more prizes this week at the American Royal Live Stock show in Kansas City than all other competitors combined. The best breeders of

the country entered their stock. Prizes won were two championships, 16 firsts, eight seconds, and eight thirds.

P. J. Englund of Falun, a student at the agricultural college, won the highest honors in the American Royal stock judging contest. The team of five students, representing the college in the contest, took third place.

The contest was close, the difference between the high and low scores being but 80 points. Four thousand points represented a perfect score.

Members of the team remained in Kansas City Tuesday and Wednesday to study the cattle on exhibit. Dr. C. W. McCampbell, associate professor of animal husbandry, accompanied the team to Kansas City.

Members of the team are R. Weimer, Fredonia; B. M. Anderson, Manhattan; P. J. Englund, Falun; J. R. Neale, Manhattan; L. E. Howard, Coldwater.

RAINFALL IN SUMMER BEAT NORMAL AMOUNT

Excess Four Inches in 1916 Crop Season, According to Records Covering Half Century

Rainfall for the 1916 crop season—April to October—was four inches in excess of the normal precipitation for the period, notwithstanding the mid-summer drouth, which materially reduced the corn yield, according to a summary of weather conditions at Manhattan issued by J. O. Hamilton, professor of physics in the Kansas State Agricultural college.

The total rainfall for the six months was 27.24 inches, as compared with 37.18 for the same period in 1915. The crop season record for the 58 years covered by the agricultural college figures was 38.27 inches in 1908. In 1864 but 13.19 inches were recorded.

The 1916 precipitation by months follows: April, 2.17; May, 6.80; June, 7.43; July, 1.92; August, .71; September, 8.12.

The average rainfall for April is 2.54 inches; for May, 4.54 inches; and for June, 4.62. As the rain in these months in 1916 exceeded the 58-year average, conditions were favorable to the production of the comparatively heavy wheat crop. The average rainfall for July is 4.65 inches and for August 3.88 inches. In 1916 the rainfall for these two months was but 2.63 inches. As moisture in July and August is an important factor in the production of corn, the reason for the poor crop this season is evident.

GO INTO DAIRYING IF YOU SEEK DEPENDABLE RETURNS

Requires Small Capital, and Prices Do Not Fluctuate a Great Deal

Dairying is a satisfactory business because it furnishes dependable returns. A man with small capital can invest his money in a dairy cow and begin immediately to realize on the investment, points out O. E. Reed, professor of dairy husbandry in the Kansas State Agricultural college.

"Prices of milk and butter fat are never subject to any great fluctuation," says Professor Reed.

"A farm used for dairy purposes does not need to lose in fertility, and may be used for dairying almost indefinitely. On a well managed dairy farm practically all the feed grown is marketed through the cow. Concentrated protein feeds are usually purchased to balance the ration. These feeds contain a high percentage of fertilizing ingredients, and the manure from the cows consuming such feeds is rich in plant food.

"Selling grains and other crops from the farm means selling soil fertility or plant food. No soil can grow crops year after year without reaching the point where depletion is felt. When animals and milk products are sold from the farm, only a small portion of the plant food is sold."

COST OF ROBBING SOIL

SYSTEM OF FARMING PRACTICED IN KANSAS IS EXPENSIVE

Wheat Crops Have Removed Plant Food from Fields of State Valued at \$600,000,000, According to Prof. L. E. Call

Because Kansas farmers have been robbers—soil robbers—in the last 45 years, the necessity for soil maintenance was emphasized by L. E. Call, professor of agronomy in the Kansas State Agricultural college, in an address on "The Proper Seedbed for Wheat" at the Wichita International Wheat show this week.

"The fertility of the soil is one of the most important factors to consider in preparing the ground for wheat," said Professor Call. "Many have thought the soils of Kansas inexhaustible. Nature has given the state a soil of unusual fertility. The wild native grasses and legumes growing upon the Kansas prairies for ages have accumulated an immense quantity of easily available plant food which is now stored in the organic matter and humus of the soil. The farmers who first broke the prairies found them of great fertility and found that they would produce immense crops of wheat when favored with proper climatic conditions.

SYSTEM IS EXPENSIVE

"Cultivation destroyed much of the organic matter in which most of the easily available plant food is held. Little or no effort was made to return to the soil such material, and consequently its productiveness declined. In fact, our system of farming since the settlement of the state has been a soil robbing process. For example, the plant food removed from Kansas soil by the wheat crop alone during the past 45 years has been worth more than \$600,000,000.

"This wheat has been largely sold and milled outside the state where even the bran and shorts secured therefrom have been fed to cattle in Europe or the eastern states and through the manure produced has helped to maintain the fertility of the soils of these countries while Kansas soils have been depleted.

"Even the wheat straw, worth for the plant food it contains more than \$12,000,000, to say nothing of the value of the organic matter, has been largely burned or otherwise wasted.

"What has been the result of such a system of farm practice? In Russell county a soil was examined that had been cropped continuously to wheat for 30 years and it was found that during this period it had lost more than 30 per cent of its nitrogen and more than 34 per cent of its organic matter. The productiveness of such a soil has been greatly impaired.

DECREASE IN WHEAT PRODUCTION

"How much it has diminished it is impossible to say, because the record of production has not been kept, but statistics show that for the state as a whole the acre yield of wheat for the past 25 years has been 17 per cent less than for the 25 years preceding this period. It is time that greater attention be given to maintenance of the soil on the wheat farms of the state for the first requirement of a good seedbed for wheat is a fertile soil."

It is not as a rule advisable, pointed out the speaker, to sow wheat on ground that has grown a late maturing crop. Such crops as alfalfa, kafir, sweet sorghums, and Sudan grass belong to this class. These crops grow so late into the fall that the ground is left almost depleted in available plant food and moisture and consequently is in poor condition to produce a crop of wheat.

Such crops should be followed by corn, an early maturing variety of sorghums such as milo or feterita, or in western Kansas fallowed and then

seeded to wheat. Corn leaves the ground in better condition for wheat than kafir principally because it matures earlier.

Even though the corn crop is not harvested as soon as it matures it ceases to grow and there is an opportunity for the soil to become replenished in available plant food and moisture before wheat is sown providing the corn has been kept clean and free of weeds.

HOW TO PREPARE SEEDBED

A seedbed for wheat following inter-tilled crops like corn, kafir, and potatoes, can usually best be prepared by disking the ground after the crop is removed. The earlier the crop can be removed and the sooner thereafter the ground can be disked, the better the seedbed.

Usually as good a seedbed cannot be prepared on corn ground as on land that has grown oats, barley, or wheat. These small grains mature early in the summer and can be removed from the land in time to plow, list, or disk the ground from six to ten weeks before wheat seeding time. Ground that is worked early in the summer contains more available plant food, and usually more moisture, and furnishes a better seedbed for wheat than ground worked but a short time before the crop is sown.

ENGINEERING SHOPS GET UP-TO-DATE MACHINERY

Repairs Are Also Being Made—Safety and Efficiency Are Enhanced by Improvements

New machinery is being installed and repairs are being made in the engineering shops of the agricultural college.

A traveling crane, built in the shops, is being set up in the foundry. One man can handle any weight up to four tons anywhere in the iron work section of the foundry by means of this piece of machinery.

Four electrically driven wood lathes are being set up in the pattern shop to be used in conjunction with four new lathes already in use. Their installation eliminates the old system of belts and overhead shafting, and adds to the safety of the equipment used by the students, as there are no exposed parts to endanger the workmen.

A new exhaust stack has been built in the blacksmith shop to replace the old one which was rusted out by the sulphur in the exhaust smoke.

A geared type of milling machine has been put in place in the machine shop to take care of the heavy gear cutting and milling work and the repair work of the college. This machine is one of the latest motor driven types and is the best of the kind made in the United States.

A new reinforced concrete floor is being laid in the machine shops to replace the old wooden floor which has been in use since the building was constructed. The termites were attacking the old floor and in places had made useless some of the main supports.

Dr. James E. Ackert, assistant professor of zoölogy in the Kansas State Agricultural college, is author of an article in Genetics on "The Effect of Selection in Paramecium." The author reaches the conclusion that variation in the size of paramecia descended from a single animal appears due to environment and growth, but selection within the progeny of a single paramecium is without effect.

When advertising becomes less strained and more natural, less exaggerated and more credible, less vehement and more understanding, it will gain more general belief, a greater response, and far larger profits for its sponsors than ever in its history.—Howard L. Hillman.

CAN MAKE BEST BUTTER

COMPETENT FARMER IS ABLE TO EXCEL CREAMERY MAN

Milk Should Be Clean and Should Be Separated Immediately After Being Drawn—Take Precautions to Prevent Growth of Bacteria

There is no reason in the world why the farmer cannot make butter of higher quality than that made at the creamery, according to N. E. Olson, instructor in dairy husbandry in the Kansas State Agricultural college.

"The farmer can keep his cream in excellent condition," says Mr. Olson, "while the creamery man has little control over the cream he buys—hence the farmers' butter should top the market.

"The first step in the making of good butter is the production of clean milk. If milk contains no putrefactive and gas forming bacteria, butter can be produced which will be free from odors and which will not putrefy, if proper precautions are taken with the cream and with the butter after it is churned and packed.

SHOULD TEST 30 TO 35

"As soon as the milk is drawn it should be separated to insure efficient separation of the cream. If separated later it should be heated. In order to prevent bacterial growth the cream should be reduced to as low a temperature as possible before it is mixed with the cream of previous skimmings. Cream that tests from 30 to 35 per cent is best for butter making.

"About 24 hours before churning, the cream should be raised to a temperature of 70 degrees, and kept at that temperature until it has a mild acid taste. After cooling, it is then ready for churning. Since summer butter is made up of softer fats than winter butter, it requires a temperature of from 52 to 58 degrees, while winter butter requires a temperature of from 58 to 62 degrees for churning. These temperatures should be maintained a short time before churning.

"The churn should be filled from one-half to one-third full and turned at a rate which will give the greatest agitation."

HENS SHOULD FINISH MOLTING BEFORE COLD WEATHER STARTS

Poultry Specialist Tells of Rations to Hasten New Feathers

Hens must finish molting before cold weather starts or they will not lay in the winter months. Because of this fact a special combination of feed should be given to hasten the growth of the new feathers, according to Ross M. Sherwood, acting head of the department of poultry husbandry in the Kansas State Agricultural college.

"Sour milk and beef scrap are useful at all seasons," says Mr. Sherwood, "but linseed oil meal is especially good at this time. There are certain food materials in oil meal which are needed in feather building and which are not found in the other feeds mentioned. Practical feeders often point out that oil meal loosens the old feathers. This may be the result of the rapid growth of new feathers caused by food materials contained in the oil meal."

The following ration is recommended for the molting season: 60 pounds of corn chop, 60 pounds of wheat bran, 20 pounds of meat scraps, and 15 pounds of old process oil meal. This is fed in combination with a scratching feed made up of two or more of the cheapest grains grown locally.

After the fowls have completed the molt and are well feathered, this mash may be given: 60 pounds of corn chop, 60 pounds of wheat bran, 30 pounds of wheat shorts, and 20 pounds of meat scraps. Sour milk is useful with both of these rations.

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N. A. CRAWFORD.....Managing Editor
J. D. WALTERS.....Local Editor
ADA RICE, '95, M. S. '12.....Alumni Editor

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WEDNESDAY, OCTOBER 11, 1916

INSIST ON GOOD SCHOOLS

This is the time of year when special interest is taken everywhere in the schools. The young men and young women have gone off to college, the high school students are filling the local newspapers with accounts of football, debate, and other activities, and the smaller boys and girls are getting acquainted with "Teacher" in the elementary schools.

It is significant that the papers devote very little space to anything done in the elementary schools, whether in town or in country. The papers print what the people are most interested in. If the elementary schools were a chief interest of the people, the newspapers would be full of elementary school stories.

It is a lack of interest in the elementary schools, whether people realize it or not, that keeps them from improving as fast as they should. How many parents know just what their sons and daughters are studying, and just how they are being taught?

Everywhere the attention of parents would improve the schools. This is particularly important, however, in the country. In the cities educational work is more definitely systematized, with a large number of supervisors to see that it is carried on properly. In the country, if the parents don't watch the schools, nobody will do it, except the county superintendent, who never has sufficient time to give due supervision to every school.

The country children need just as good training and in just as good schools as the city children. They will get it if their parents will investigate and then insist.

AT AMERICA'S DOOR

No more worthy cause has ever been presented to the people of the United States than the relief of the war stricken Armenians and Syrians, for which President Wilson has set apart Saturday and Sunday, October 21 and 22, by proclamation. Much was given for relief in Belgium, but the need in Asia is even greater. Though the war was not of their making, these people have suffered every privation. Though the war was not of her making, America has reaped financial profit from it. It is merely fair that she should relieve the sufferers.

As Dr. Talcott Williams, dean of the school of journalism in Columbia university, writes, "The life of a people is laid at the door of America."

"The Armenian nation, sufferer and martyr beyond all of our present day, lies near death as a people. Unless aid come, the race perishes from the face of the earth."

"All woe has come to it. Captivity, pestilence, the sword, starvation. Half are gone. The rest starve and die. For two years, a thousand a day have perished. For miles and leagues

of long roads and trails, their bodies lie, men, women, and children, dead as they fell. The remnant is in the desert, where no food is, dying by scores, by hundreds, by thousands, by hundreds of thousands.

"Driven by the sword from their homes to a long tramp of five to six hundred miles, what the sword spared the desert has slain, what the desert left the pestilence has smitten, and hunger has followed to end a people, scattered, wounded, and forsaken. It is as though all the population of Kansas were driven, a headlong, helpless mass all the blood stained way to the Rio Grande, there dying as they searched for food, in a desert of unsown fields, eating of the wild. This Armenian remnant waits American aid as the one hope left.

"Europe has its own to aid and cannot succor. No help can come save from America and from the churches of America of every faith and creed.

"Give, that these may live. Give, that a people may be saved. Give, that once more these thousands that are left may be fed today and in due season be set in their homes again.

"This good work has begun behind the advancing Russian army. Already, homes are rebuilt, the naked clothed, the hungry fed, and plows and seed corn promised for the harvest. Give, that this may spread. The plate dotted with change that goes down an aisle will save a family. Small gifts and large will save a nation.

"All this applies in full measure to the Syrians. They outnumber the Armenians. They have not suffered such sore persecution as the Armenians, but the privations of hundreds of thousands of them are equally great.

"Remember the Sunday, October 22, set apart to this work, to Armenian and Syrian and Persian—to all that suffer, Jew and Gentile, Christian and Moslem. All that need share.

"Give lest the blood of those that die, because you gave not, be on your garments. Lest faces you will never see, stiffen in death because you gave not in this day and hour of helpless, hopeless need which cries aloud for your gift to save from the grave."

THE EDUCATED FARMER WINS

A commission in New York is nosing into agricultural conditions, and finds that the farmer who is a high school graduate makes twice as much money as the one who is not; the college-graduate farmer makes three times as much.

It really wasn't necessary to have a commission develop statistics to demonstrate this. Intelligence, which on the whole bears a pretty steady relationship to education, is now commonly accepted as a good thing almost everywhere.—Washington Times.

A GOOD COW

Theodore Marburg, former minister to Belgium, tells this tale about the proposed sale of a cow. The discussion between buyer and seller ran somewhat as follows:

"She's an awfully good old cow. Our children think the world of her. You'll like her immensely."

"And how much milk does she give?"

"Don't know exactly, but she's a nice cow—first class."

"Well, you must have some idea—does she give a gallon at a milking?"

"Never kept very close track."

"But you must have a rough notion about it. Does she give as much as half a gallon a day?"

"Couldn't say definitely. She's an awfully good, kind old cow, though. If she's got any milk she'll give it to you."

UTILIZING WASTE TIME

The problem of waste time is a serious one on most farms. Rainy weather means losing the farmer's time and that of his hired men, while during the winter and other slack seasons this loss is even heavier. Every farmer should have a list prepared in advance of profitable ways to employ waste time.

Preparedness is as important for the farmer as it is for the soldier. The

farmer who wins is the farmer who keeps up with or ahead of the game, who utilizes rainy days and slack seasons to get his affairs in such shape as to enable him to meet the demands of his busy seasons without strain or confusion.

For example, when it is too showery or too muddy to work to advantage in the fields, weeds can be mowed with a mower or scythe; fences can be repaired or built; tools can be overhauled, repaired, or sharpened; buildings can be repaired, hedges can be trimmed or pulled out; bushes can be grubbed from meadows and pastures or along fence rows. The farm garden often can be worked when the weather will not permit field work, and stock farmers frequently can haul hay and straw from the field between showers.

Even the winter season can be made highly profitable if intelligently em-

A QUARTER CENTURY AGO

Items from The Industrialist of October 10, 1891

President Fairchild spent the afternoon of Wednesday in Topeka.

The military department will soon gain by exchange 100 new belts and buckles.

Colds were prevalent during the early part of the week, owing to the cold wave.

Professor Failyer spends the day in Kansas City to witness the closing scenes of the fair.

Prof. F. W. Hiddleston, who attended college in 1874-'75, is teaching in the Milton academy at Milton, Ore.

The college library is under obligations to the author for a copy of Biglow's "Principles of Strategy," just received.

A Home Appeal

The New York World

TO Mary Ottieri, who used to live at No. 197 Hester Street:

This is a letter from a reporter of The World, who never saw you and probably never will, but who thinks you'd better hurry home.

You see, your mother called at The World office last night. She's still a good-looking woman, Mary. She probably was as pretty as you are, according to your photograph which she brought with her. But her cheeks were stained and swollen from crying. She kept wrapping her shawl around her as she shivered from nervousness.

You know, she doesn't talk English, so she brought a young fellow with her to explain. She wanted The World to help try to find you. And she opened her purse and wanted to give the reporter all the money she had. And when he shook his head she thought she hadn't offered enough, and she said she'd get more. But, you see, The World doesn't take money for anything like that. But, just think. She said she would borrow whatever might be needed. She wants you that much, Mary.

She told, through the young fellow—you used to be in his mother's house every day, you know—how your little brother Josie and your little sister Nancy, whose "little mother" you were, have been crying, like she has, every one of these twenty-five days and nights you've been gone. And how she thinks maybe they will die if you don't come back. Maybe she'll die, too. Who knows?

Now, it doesn't make any difference why you went away, Mary. If you made a mistake, it will be all right. Don't be foolish and think you can never be forgiven or anything like that. No matter what you did, or why you went, your mother, Assunta, has already forgiven you.

So, be a sensible little girl—for you're still a little girl, if you are sixteen—and as soon as you see this (for the young fellow says you read The World every day) go right home and cheer her up and make the kids laugh again.

At least, let her know where you are—right away.

ployed. Stock farmers have a supply of regular work during that season, but they and all other farmers should recognize the possibilities of the winter months as a season of preparation for the rush of work in the spring.

Manure should be hauled out in the winter whenever the weather permits. Farm machinery should be greased or oiled when put away and then carefully gone over during the winter months and thoroughly repaired. Edged tools should be sharpened, harness repaired and greased, extra whipple trees made, and buildings repaired. Fence posts can be cut, and firewood for the year laid in and chopped ready for use. During the winter months needed wells or cisterns should be dug, seed corn should be tested, and small grains should be cleaned and tested.

Moreover, every farmer should lay out for himself, or get the county agent or the state agricultural college to lay out for him, a course of reading from agricultural bulletins for the winter months.

Every farmer should try to acquire each winter a thorough knowledge of some new crop, or of some new scientific agricultural method. One winter alfalfa could be taken up, the next soy beans, the next pigs, etc. In addition to this, when possible, the farmer should attend, or send his boys to the short course at the state agricultural college.—Carl Vrooman, Assistant United States Secretary of Agriculture.

Professor Nichols spends his spare time in rewinding the dynamo that it may be in readiness for electrical experiments.

Professor Hood hopes to occupy his cozy new office in the iron shop next week. His present office will be used as a store room.

The sorghum sugarc experiments conducted by the chemical department are cut somewhat short by the sharp frosts of this week.

K. C. Davis '91, has resigned his position as teacher in the Indian school at Hoyt, Jackson county, and entered the State Normal school for a special course.

Twenty-six volumes of the Edinburgh Review have just been received from the state printer, completing the set. There have also been received the first 81 volumes of Blackwood's Magazine.

About 100 chrysanthemums in the gardens met their fate on Tuesday night at the hands of Jack Frost. Fifty odd, having been taken into the greenhouse, were saved for fall blooming.

Miss Abbie L. Marlatt, '88, professor of domestic economy in the Utah Agricultural college, writes of successfully serving lunch to the 250 members of the irrigation congress from Salt Lake City on September 19, having only four hours in which to prepare the same.

AN AUTUMN LEAF

Arthur Goodenough

Her hair is like the chestnut brown,
Down dropt from its forbidding burr;
A thing of joy—a virgin's crown—
And it is good to look on her.

Her brow is like the chiseled one
Pygmalion's statue may have had;—
To see it is enough to make
A poet or a painter glad!

Her eyes are colored like the flower
That we call heartsease and could I
The right response detect therein
My heart were eased till I should die!

Her lips defy me to describe—
But as I see them half unclose—
A kiss from them, upon my soul
Would add some sweetness to the rose!

But as I view her beauty bright,
And listen to her laughter gay,
A sudden mist obscures my sight
And hastily I turn away.

For she is like the brilliant leaf
That trembles on the autumn bough;
Foredoomed, alas! and soon to die,
But O, how bright and lovely now!

SUNFLOWERS

Mrs. Dressed Uppe has turned in her Ford automobile as part payment on a pair of fall shoes.

The election of a president in Nicaragua passed off quietly. Only five or six persons were killed, and a few more injured.

A freshman reports that her high school English training has enabled her to converse readily upon topics entirely foreign to her.

ONE ON WISCONSIN MARKSMANSHIP

Hunting is strictly forbidden on my farm as I have no more cows I want shot. C. T. Haigh.—Cumberland (Wis.) Advocate.

ANXIOUS READER: No, we can tell you of no place where a pound of butter or a half dozen eggs may be bought on the installment plan. We advise that you stand it as long as you can and then shoot yourself.

SOLD THE COW!

Bill Nye, the humorist, once had a cow he wanted to sell and he unblushingly advertised all her faults while naming the few virtues she seems to have possessed. His advertisement ran:

"Owing to my ill health, I will sell at my residence in township 19, range 18, according to the government's survey, one plush raspberry cow, age eight years. She is of undoubted courage and gives milk frequently. To a man who does not fear death in any form, she would be a great boon. She is very much attached to her present home with a stay-chain, but she will be sold to any one who will agree to treat her right. She is one-fourth Shorthorn and three-quarters hyena. I will also throw in a double-barrel shotgun which goes with her. In May she usually goes away for a week or two and returns with a tall, red calf with wobbly legs. Her name is Rose. I would rather sell her to a non-resident, the farther away the better."—Associated Advertising.

SON AS PARTNER

One clear thinking, observant Missouri farmer has adopted the plan of contracting with his son to receive 25 per cent of the net profits of the farm for his work. This contract has now been in operation for four years, and no year has the son failed to receive more than a hired hand's wages, besides getting his living, the use of a team and buggy, and a more enjoyable life generally than he would expect should he seek employment elsewhere.

How much better such an arrangement is than paying the boy straight wages, or than forcing him to go off on someone else's farm to find his opportunity. By this method he is stimulated to put his best thought and effort into making the farm produce heavily and, what's more, he has the dignity and responsibility of a partner in the business.—Farm and Fireside.

AMONG THE ALUMNI

Miss Elma S. Jones, '13, is teaching in a girls' school in Tucson, Ariz.

Miss Mary Scott, '16, is teaching domestic science and art in the high school at Pleasanton.

H. E. Baird, '16, is teaching agriculture and coaching athletics in the high school at Red Cloud, Nebr.

Miss Isla Bruce, '16, is instructor in public school music and domestic science in the Oskaloosa high school.

Esther Nelson, '15, spent the summer in training at the Barnes hospital, St. Louis, Mo., and is now employed as assistant dietitian in the Cook County hospital, Chicago.

L. B. Barber, '11, has been transferred from the Island of Guam to Twin Falls, Ida. He is in the states relations service of the United States department of agriculture.

Miss Minnie B. Pence, '14, of Fairbury, Neb., is author of an interesting and practical article on "Correlation of Oral and Written English," in the October number of the Nebraska Teacher.

Miss Wilma Orem, '10, received her master's degree from the University of Michigan and is now at home with her mother in Manhattan. She is doing special work for the history and English departments.

Miss Alma G. Halbower, '14, is studying in Teachers' college, Columbia university, New York. She is making her home with Mr. A. L. Burns and Mrs. Ruth (Gilbert) Burns, '14, 105 Audubon avenue.

Miss Frances Ewalt, '16, teaches domestic art, English, and physiology at Morrill. She will have domestic science work as soon as the equipment is installed. She says she is working in the best small town in Kansas.

James R. Coxen, '07, has taken a leave of absence from his work in the Southwest Texas State Normal school and is pursuing studies in manual arts and education leading to a master's degree, in the University of Wisconsin.

Miss Maude Hart, '01, is principal of a boarding school for Indian girls at North Fork, Cal. It is under the direction of the Presbyterian board of home missions. Miss Hart was formerly in similar work at Albuquerque, N. M.

Miss Minnie Gugenhan, '15, is again teaching in Chewelah, Wash. She has charge of domestic science, domestic art, and bookkeeping in a union high school, to which students are brought in from places as far as seven miles in the country.

Lewis B. Sponsler of Hutchinson, who was a sophomore here in 1910-1911, will soon start with the Hampton Court singers on a twenty-one weeks' tour of the lyceum circuit. Mr. Sponsler's music was much enjoyed while he was a student in the college.

Leon M. Davis, '09, and Mrs. Hazel (Bixby) Davis, '10, are now located in Washington, D. C. Mrs. Davis and son spent the summer in Manhattan visiting relatives. Mr. Davis is in the office of markets and rural organization, department of agriculture.

MARRIAGES

POORT-HOLE

Miss Edna J. Poort and Mr. Walter T. Hole, '12, were married a few days ago. They will be at home after October 15 at 1018 Topeka avenue, Topeka. Mr. Hole, who is a civil engineer, is with the Santa Fe railway.

BIRTHS

Born, to Mr. W. W. McLean and Mrs. Elsie (Tulloss) McLean, '08, Ottawa, on October 1, a daughter, Betty Jean.

Born, to Mr. P. H. Skinner, '07, and Mrs. Josephine (Walter) Skinner, '07, Topeka, a son, Kenneth Walter. Mr. Skinner is building estimator for the Santa Fe railway.

WHITTAKER IN THE SOUTH

M. F. Whittaker, '13, is meeting with success as an architect in Orangeburg, S. C. The following letter shows that he is a loyal alumnus of the college:

"Dear Miss Rice:

"Replying to your letter of some time ago concerning the life membership project of the Alumni association, will say that I count myself fortunate in being a member of this great organization, and am ready at all times to do my share.

"Inclosed you will find check for twenty dollars for my life membership fee. Hoping that the fund will continue to grow, I remain

"Yours very truly,

"M. F. WHITTAKER, '13."

WHIPPLE IN ANTWERP

The following letter has been received by Miss Minnie L. Copeland, '98, concerning A. D. Whipple, '98, from whom no one has heard since the war broke out:

"Dear Madam:

"A letter from you addressed to Mr. A. D. Whipple has been forwarded by the postal authorities to this office. I do not know of any way in which it would be possible to secure the delivery of a letter to Mr. Whipple. He is actually at the present time in Antwerp, where he and Mr. Clayton are in charge of the American interests in the Bell Telephone Manufacturing company. We never receive letters from them and do not write to them, but we have heard from time to time that they are both well. Their resources are ample and I do not think there is any reason to believe that they are likely to experience any special hardships, although living conditions in Antwerp cannot be very agreeable.

"Possibly you will find on inquiry from the postal authorities in the United States that there is some way by which letters can reach Antwerp, assuming of course that they would contain nothing objectionable to the censorship.

"My own impression is, however, that unless there is something of considerable importance, it would be better not to try to communicate with Mr. Whipple until after the war, as there seems a possibility that the receipt of letters might be a source of embarrassment to him.

"Yours faithfully,
"F. H. WILKINS."

PRAISE FOR MAJOR ORR

Major Harry D. Orr, '99, head of the medical corps of the First Illinois cavalry, is the subject of an illustrated article, highly complimentary, in the First Illinois Cavalryman, a unique field newspaper now being published near Brownsville.

The Cavalryman says:

"Clean food, healthy surroundings and an absolutely dependable system of sanitation are as important to the armies of today as are weapons and ammunition. In the winning of modern wars, the man who administers the pill is as necessary as the man who discharges the bullet.

"Perhaps no department of the army is so highly organized and has so many details under its supervision as has the medical corps.

"Here are a few things for which the medical corps is responsible: incinerators, kitchens, length of work day, balancing rations, condition of clothing, food preparation, drainage, shower baths, fighting insects, personal hygiene, removal of manure.

"The care of the sick and wounded is the least of the worries unless during the most frightful of wars.

"One of the regiments along the border, the First Illinois cavalry, is said to lead in the health of its men. The medical corps is responsible for this care, and the man who heads the corps is Major Harry D. Orr.

"Major Orr was born in Wayne county, Ohio, on August 25, 1877. He received his early education in the public schools, later attending the Kansas Agricultural college. After several years of study in the medical department of that institution, he entered the Northwestern University

Medical school, from which he graduated in 1904. For two years after that time he was on the resident staff of St. Luke's hospital, and later spent a year in a similar position in Alexian Brothers' hospital.

"In 1907 he started private practice as a physician. Since that time he has won an enviable place in the medical world of Chicago.

"Major Orr first became interested in a military career while attending college in Kansas. Two years of compulsory drill were required of all students there. He liked the training so well that he took a full military course during all his four years in the institution.

"In 1902, not long after he went to Chicago, he enlisted as a private in the hospital corps of the First Illinois cavalry. He was commissioned as a lieutenant in the organization in 1907, and in 1908 was promoted to captaincy. Later he became the major in charge of the medical department of the regiment, succeeding Dr. W. A. Evans, former health commissioner of Chicago and at present health editor of The Chicago Tribune.

"It is Major Orr's belief that the present border service of the national guard, aside from all other considerations, has been well worth while as showing the great advance in military science in the American army since the days of the Spanish-American war.

"It has taken the border mobilization to show the public at large what camp sanitation and the prevention of disease really mean in the concentration of modern armies, and what progress has been made along those lines," he said.

"I believe that the present training the members of the regiment are getting will add years to their lives. One of the greatest values of it, as regarded from the standpoint of what it will accomplish for them when they return to civilian life, is that it has taught them to take care of themselves physically. As an illustration, do you suppose that any man who has served on kitchen police, and thus had the opportunity to observe the care taken in the preparation of food, will ever eat in an unclean restaurant after he gets home again?"

"Major Orr is in favor of universal military training. He believes that it will solve all military problems of the country."

COLLEGE TO SEND OUT FORECASTS BY WIRELESS

Unique Service Will Get Weather Predictions to Many Kansas Towns in Record Time

Daily weather forecasts will be sent out by wireless from the Kansas State Agricultural college beginning Wednesday. With the exception of the forecasts put out at night from Washington, D. C., for the particular benefit of naval stations, this is the first time anything of this kind has been attempted.

"Dozens of stations will pick up the forecast," said J. O. Hamilton, professor of physics and weather observer, today. "Several stations, including those at Bennington and Logan, have asked for this service. There are many amateur stations in Kansas. This means that in numerous cases towns which receive the forecasts by mail will get them several hours in advance of the usual time."

September was the wettest September in the 58-year period in which local records have been kept, according to the weather summary issued by the Kansas State Agricultural college. The rainfall was 8.12 inches, the previous record being 8.06 inches in September, 1860.

The mean temperature for the month was 68.9 degrees, which is a fraction more than one degree below normal. The mean maximum temperature was 83.75 degrees. The highest temperature for the month was 101 degrees on September 5; the minimum was 29 on the twenty-ninth, 10 days ahead of the average date for the first killing frost.

KEEP YOUR BEES STRONG

PROPER WINTERING IS ESSENTIAL TO LARGE SPRING COLONY

Protection from Cold, Ample Supply of Food, Plenty of Young, and a Good Queen Are Important Matters, Says Entomologist

Bees should be properly wintered to insure large, strong colonies in the spring to carry on the season's work, according to Dr. J. H. Merrill, assistant entomologist in the Kansas State Agricultural college. If the colony is strong, it will raise plenty of brood, thus enabling it to take fullest advantage of the honey flow which is to come.

Some of the essential points are protection from cold, plenty of food, plenty of young bees, and a good queen.

"Bees do not hibernate in the true sense of the word," commented Doctor Merrill. "They form a cluster for protection whenever the temperature in the hive drops to 57 degrees. This cluster is formed by some of the bees occupying the empty cells in the comb while the others press together with their heads turned inward and their bodies touching. The hairs on their bodies add to the insulation.

RESEMBLE STORAGE BATTERIES

"The center of this cluster is hollow and moving around in it are those bees which raise the temperature by muscular movements. After a period of activity, the bees in the center of the cluster exchange places with those on the outside of the cluster.

"A bee may be compared to a storage battery. It has just so much energy to expend and after that is consumed the bee dies. A colony of bees which has been severely taxed by maintaining the proper temperature within the hive will have but few members left in the spring to care for the issuing brood or perform their other duties in the hive."

The single walled hive, points out the entomologist, does not offer enough winter protection in the northern part of the United States. There are on the market double walled and other hives designed especially for wintering bees. The single walled hive will, however, if properly packed, prove perfectly satisfactory.

KEEP BEES OUT OF DOORS

The tendency in wintering bees is towards abandoning cellar wintering in favor of outdoor wintering in packing cases. When properly protected, the bees will be safer than in a cellar and will be in better condition at the time of honey flow.

Two or more hives may be placed together in one packing case. If this is done, each hive helps keep the other warm.

After the hives are placed in the packing case, the spaces between them and the sides of the case should be filled with some good packing material. This open space should be from six to eight inches, the wider the better.

PROVIDE GOOD INSULATION

Insulation may be obtained by using ground cork, chaff, sawdust, shavings, paper, or dry leaves. If leaves are used, they should be well packed down, while sawdust should be lightly poured in to fill the space. A tunnel, eight inches wide and three-eighths of an inch high, should be made from the hive to an outside entrance. These openings, however, should not be on the north side of the case.

Doctor Merrill advises that these packing cases be put on soon after the first killing frost. Then, if the bees are well supplied with stores, there will be no need of disturbing them until late the following spring.

"A colony of bees to winter well," continued Doctor Merrill, "should have from 25 to 30 pounds of stores. Honey is the best winter food for bees. It should preferably be the lighter colored honey, such as that from white clover. Honeydew honey should never be left in the hive for winter. If, after the honey flow ceases, it is found that there are insufficient stores, a sugar sirup should be provided. This is made by boiling for fifteen minutes

two to two and one-half parts of sugar to one part of water by volume. One ounce of tartaric acid should be added for every 40 to 60 pounds of sugar used.

SIRUP USEFUL FOR FEED

"If the stores are insufficient, this sirup may be fed before freezing weather sets in. If the bees have stored undesirable food, such as honeydew honey, it should be removed and the sirup fed.

"There should be plenty of young bees, for they can pass through a severe winter and emerge in the spring in much better condition than older ones.

"A good queen will insure having plenty of young bees at the beginning of winter and she will begin brood rearing in due season in the spring. The colony of a weak or failing queen is not likely to have strength enough to winter well."

TREE SURGERY IS NOT FOR KANSAS CONDITIONS

If Orchard Is Not Too Far Gone, Cultivation, Pruning, and Spraying Are Better Methods of Treatment

Tree surgery is not a method to be considered seriously in renovating the neglected orchards of Kansas, asserts F. S. Merrill, instructor in horticulture in the Kansas State Agricultural college.

"If the orchard is not too far gone," says Mr. Merrill, "it may be renewed by easier and more familiar methods. Of these, cultivation, pruning, and spraying are the most important.

"It does not pay to fill the cavities of fruit trees with cement because the trees are so short lived that by the time they have developed cavities large enough to make the treatment worth while they have already passed the productive stage.

"Tree surgery is too expensive a method to be used in the ordinary commercial orchard. When this work is done properly, it usually takes from two to three days to treat one tree. Multiply this by the number of trees in the orchard and then by the labor cost per day one will get an idea of what it will cost to renovate an old orchard by this treatment. The future returns that will be realized from the orchard are not likely to be at all proportionate to the cost of renewal.

"There are many neglected orchards in this state, however, which can be made to bear good apples without using such expensive measures as tree surgery. Many unproductive orchards are in sod, and probably have been in sod for several years. In some cases crops of hay are taken from the ground and sometimes the orchard is used for pasture.

"Generally it is desirable to break up this sod and bring the orchard into good cultivation. The orchard ground that formerly yielded freely has become impoverished and requires cultivation to make more plant food available. Insects and disease germs which may be lurking in the ground are by this method exposed to the birds and sunshine. The stirred ground more readily absorbs the rain that falls upon it.

"The trees must be pruned but not by the bouquet method—the one so commonly used by the greenhorn who cuts off all the small branches on a limb, leaving a bunch on the end of each main branch. Trees must be thinned cautiously, permitting light and air to sift through the branches and allowing the fruit to develop without being bruised; and yet too severe pruning may do as much harm as too little."

Spraying of the neglected orchard is done in the same way as that of orchards that get proper care. The right time to spray and the right spray to use are the things that count, in the opinion of Mr. Merrill.

In attempting to renovate an old orchard, however, any one of these methods alone will accomplish little. It is just as useless to prune and not spray as it is to spray and not prune.

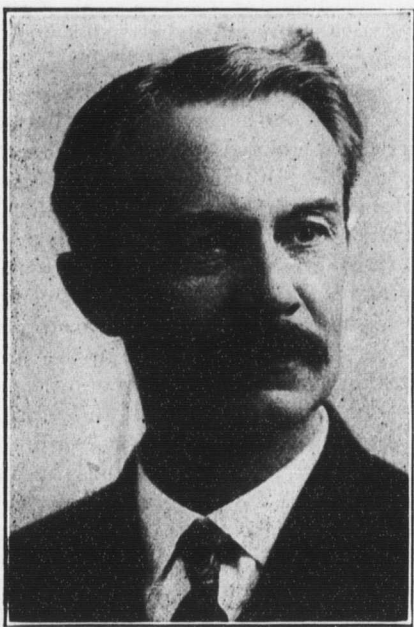
GAUGE STUDENTS' SENSE AS WELL AS KNOWLEDGE

NEW RECORD BLANKS WILL ENABLE PROSPECTIVE EMPLOYERS TO LEARN WHAT THEY'RE GETTING—YOUNG MEN AND WOMEN WILL ALSO JUDGE THEMSELVES

Does Bill Smith dress like a vaudeville artist on parade or does he use his vest for a breakfast plate? Can he remember what he's told, or does he have to pull out a notebook to record the hour of starting work? Can he use the English language, or is his talk a mixture of stale slang and grammatical mistakes? Is he earnest, enthusiastic, original?

These are some of the questions that the Kansas State Agricultural college will be able to answer concerning its students when the new plan of keeping character and personality records gets into good working order.

Employers, it has been found, are not interested in scholarship alone.



DR. J. T. WILLARD

They want to know a lot of other things about young men and women whom they are considering for jobs, and the college aims to give them the facts.

TEACHERS TO MAKE REPORTS

A committee of which Dr. J. T. Willard, dean of general science, is chairman, has prepared a character and personality record blank on which instructors in the institution will record their estimates of students. Some thirty qualities are enumerated on the blank. Each teacher, however, will report only on those which he has had an opportunity to observe. From the data obtained from various instructors, the college authorities feel they can give a good estimate of the students.

Here is the list of qualities: altruism, natural ability, technical ability, accuracy, common sense, cooperation, courage, decision, disposition, earnestness, efficiency, energy, enthusiasm, imagination, initiative, judgment, leadership, memory, moral character, observing power, originality, personal appearance, practicality, reliability, resourcefulness, scholarship, sense of responsibility, tact and courtesy, use of English, versatility.

In addition to getting reports on the students, the college authorities aim to help the students examine themselves as to character and personality. With the help of other members of the faculty, the committee has prepared a leaflet which will be placed in the hands of students as favorable opportunity occurs. This contains an exhaustive list of physical characteristics, matters of natural ability, education, and moral, social, and general characteristics. The leaflet, which is probably the most comprehensive blank for self study yet prepared, owes its excellence largely to the painstaking and accurate work of Doctor Willard.

STUDENT MAY EXAMINE PHYSIQUE

Among the physical characteristics mentioned are these:

Complexion: very dark, brunette, medium, blonde, very light; sandy, freckled, blotched; clear, muddy, sallow, rosy, pallid, unhealthy.

Countenance: radiant, joyous, merry, smiling, cheerful, pleasant, reposed; serious, sober, severe, repellant, scowling; vivacious, animated, bright, intelligent, quiet, dull, stupid; mobile, open, secretive, sly, cunning, curious, mischievous, sympathetic, weak, strong, abstracted, discontented, worried.

Face: long, square, round.

Hands: large, small, ordinary, thin, tapering, thick, stubby, restless.

Figure: stout, medium, slender, erect, head forward, round shouldered, stooping; robust, athletic, well-knit, loose-jointed, slouchy, angular, chunky, fat, thin.

Carriage in walking: erect, dignified, leaning forward, eager; elastic, romping, apathetic, loose, wobbling, swinging, shuffling, ordinary.

Posture, sitting: erect, leaning, bent, relaxed, careless, feet on table.

Posture, standing: erect, stooping, on one foot and then the other; careless, awkward, gawky, uneasy, shifting; leaning on or against furniture.

Body control: fidgety, hands restless, reposed, sluggish; graceful, easy, awkward; expert, skillful, clumsy; very quick, quick, moderate in speed, slow, very slow.

Health: excellent, good, fair, poor, bad; hypochondriacal; state any defects of eyesight or hearing, and any deformities or special impairment of health.

Voice: strong, medium, weak; high pitched, medium pitched, low pitched; musical, well modulated, pleasant, monotonous, harsh; nasal, drawing, lisping, guttural, falsetto.

Accent: Bostonian, New York, Yankee, Southern, Texan, Middle Western, Western, British, French, German, Swedish, other.

Dress: ostentatious, rich, stylish, tasteful, suitable, becoming, ill chosen, unobtrusive; showy, vulgar, tawdry; clean, tidy, neat, careless, seedy, torn, soiled.

Toilet: exquisite, careful, ordinary, careless, unclean.

INCLUDES NATURAL ABILITY

Matters of natural ability and the like are covered thus:

Natural ability: highest, high, good, average, fair, low, lowest.

Thought processes: brilliant, rapid, normal, slow, dull; accurate, clear, confused, obscure, inaccurate; rigorous, logical, average, illogical, incoherent.

Imagination: excellent, good, medium, poor, bad.

Memory: excellent, good, medium, poor, bad.

Power of concentration: excellent, good, medium, poor, bad.

Judgment: excellent, good, medium, poor, bad.

Common sense: excellent, good, medium, poor, bad.

Practicality: excellent, good, medium, poor, bad.

Foresight: excellent, good, medium, poor, bad.

Initiative: excellent, good, medium, poor, bad.

Resourcefulness: excellent, good, medium, poor, bad.

Versatility: excellent, good, medium, poor, bad.

Accuracy of observation: excellent, good, medium, poor, bad.

Technical ability: excellent, good, medium, poor, bad.

Executive ability—in grasp of large relations, excellent, good, medium, poor, bad; in coordination of details, excellent, good, medium, poor, bad.

Coöperative ability—with superiors, excellent, good, medium, poor, bad; with subordinates, excellent, good, medium, poor, bad.

Efficiency: excellent, good, medium, poor, bad.

Sense of responsibility: excellent, good, medium, poor, bad.

Leadership: excellent, good, medium, poor, bad.

Promise of development: excellent, good, medium, poor, bad.

Artistic and esthetic taste: excellent, good, medium, poor, bad.

Emotional strength: excellent, good, medium, poor, bad.

Emotional control: excellent, good, medium, poor, bad.

Poise: excellent, good, medium, poor, bad.

MORAL QUALITIES GROUPED

These are the moral, social and general characteristics enumerated:

Fanatical, religious, lukewarm, indifferent, irreligious, scoffing.

Orthodox, liberal, agnostic, skeptic, atheistic.

Broad minded, tolerant, receptive, conservative, intolerant.

Radical, progressive, compliant, conservative, reactionary.

Conciliatory, pacifying, self-controlled, contentious, quarrelsome.

Sympathetic, sensitive, kind, just, unkind, harsh, cruel.

Yielding, weak, firm, strong, obstinate.

Ascetic, restrained, temperate, lax, dissipated.

Prudish, modest, conventional, unconventional, bold.

Honest, truthful, sincere, deceitful, lying, dishonest.

Conscientious, reliable, honorable, unreliable, tricky.

Loyal, obedient, dutiful, disobedient, disloyal, treacherous.

Generous, liberal, just, selfish, grasping.

Trustful, guarded, suspicious, jealous, envious.

Secretive, reticent, reserved, direct, frank, talkative, loquacious.

Inquisitive, alert, attentive, receptive, indifferent, inattentive, listless.

Docile, coöperative, self willed, organizing, directive, domineering, autocratic.

Ingratiating, tactful, cautious, direct, abrupt, brusque, irritating.

Affable, cordial, courteous, formal, stiff, cold, discourteous, insulting.

Deferential, considerate, respectful, inconsiderate, negligent.

Optimistic, enthusiastic, judicial minded, discontented, pessimistic.

Fun loving, cheerful, good natured, gloomy, morose.

Bumptious, aggressive, self reliant, bashful, shrinking.

Strenuous, energetic, active, indolent, lazy.

Miserly, thrifty, provident, shiftless, wasteful.

Foolhardy, courageous, cautious, timid, cowardly.

Ambitious, contented, submissive, servile, democratic, snobbish, undiscriminating, reserved, shrewd, gullible.

Prompt, procrastinating, early, punctual, tardy.

Systematic, unsystematic, haphazard.

Orderly, disorderly; painstaking, careless; tidy, untidy.

Tractable, self willed; patient, impatient; outspoken, restrained.

Persistent, vacillating; ready, hesitating; decisive, uncertain.

Assertive, retiring; animated, quiet; vivacious, dull.

Popular, unpopular (with inferiors); popular, unpopular (with superiors); popular, unpopular (with equals).

Habits: as to alcoholic liquor; as to tobacco; as to drugs; as to profanity; as to character of society sought; as to reading matter chosen; as to conversation.

Amusements, recreations and hobbies.

Membership in organizations: religious; social; fraternal; literary; scientific; technical; professional.

ARE YOU EDUCATED?

Education and scholarship are treated as follows:

Education: high schools; academies; colleges; universities; technical schools; professional schools.

Scholarship: excellent, good, medium, poor, bad; creative, thorough, adequate, memorizing, superficial.

Professional training: theoretical—excellent, good, medium, poor, bad; practical—excellent, good, medium, poor, bad.

Specialties: State them and indicate degree of proficiency.

Use of English: excellent, good, medium, poor, bad.

Oral expression: elegant, refined, correct, slangy, ungrammatical; fluent, rapid, measured, slow; hesitating, stammering, stuttering; persuasive, unconvincing; earnest, bluffing, reckless; stilted, pedantic, lacking distinction, careless, coarse, vulgar, blustering, halting, lisping, affected, gushing; story telling ability: excellent, good, medium, poor, bad; public speaking ability: excellent, good, medium, poor, bad; debating ability: excellent, good, medium, poor, bad.

Written expression: accurate, approximate, considered, inaccurate, illogical, reckless; epigrammatic, terse, concise, extended, diffuse, verbose; vivid, clear, connected, involved, incoherent, hazy; elegant, classic, rhetorical, commonplace, inexact, loose.

Spelling: excellent, good, medium, poor, bad.

Handwriting: firm, bold, showing character, elegant, business-like, feminine, fine, school-boyish, copybook, scrawly, illegible, untidy, careless.

The plan of seeking from instructors reports on other matters than merely the student's class standing was inaugurated by A. A. Potter, dean of engineering, two years ago. The system which he put into effect in his division was similar to that used in many large industrial plants.

Last spring a committee was appointed to study the matter with reference to the whole college. The committee consisted of Dr. J. T. Willard, dean of general science, chairman; W. M. Jardine, dean of agriculture; A. A. Potter, dean of engineering; and Mrs. Mary Pierce Van Zile, dean of home economics. The deliberations of this committee resulted in the record and leaflet heretofore treated.

BOYS FROM CALIFORNIA WILL STOP AT COLLEGE

Winners in Agriculture to Visit Institution as Typical of the Middle West

Twenty-five high school boys on a transcontinental trip from California to Massachusetts will make at Manhattan on October 23 their only stop between Chicago and Denver. They will inspect the college and experiment station under the direction of the college authorities and Prof. B. H. Crocheron of the University of California.

The transcontinental tour is the outgrowth of the boys' club work in California, in which high school students grow potatoes, beans, onions, corn, sorghums, alfalfa, pigs, poultry, celery, and nursery trees as a commercial proposition.

Twenty-five of the prize winning students receive a transcontinental trip as a prize offered by a group of cities in their state. The purpose is to enable the students to learn the agricultural conditions throughout the United States, as well as see the great cities and industries of the country.

About 30 stops are made in order to come into contact with the various types of agriculture. Manhattan has been selected as the representative center for the middle west. The trip made by this group is the only transcontinental tour in which a state sends any considerable number of its boys.

In the time spent at the college, the California boys will inspect the agronomy farm, the nutrition laboratories, the hog cholera serum plant in operation, the various kinds of live stock, the greenhouses, the creamery, the engineering plant, and other buildings. A brief meeting will be held at which addresses will be made by President Henry Jackson Waters and Otis E. Hall, state leader of boys' and girls' club work.

The highest tribute ever paid to the printer's craft was expressed in three words by one of the world's greatest minds, who, in writing his own epitaph, put aside his triumphs as scientist, philosopher, reformer, diplomat and began: B. Franklin, Printer.—The Printing Art.

FIT COLLAR TO HORSE

DON'T TRY TO REVERSE PROCESS.
ADVISES DOCTOR BENNER

Special Care Should Be Exercised in Selecting and Using this Piece of Harness—To Prevent Sore Neck and Shoulders

A collar should be fitted to the horse and not the horse to the collar, according to Dr. J. W. Benner, instructor in veterinary medicine in the Kansas State Agricultural college.

"The collar that is too large should not be used on a horse in the hope that he will grow large enough so it will eventually fit," says Doctor Benner. "A collar that fits well in the spring may not fit at all in the fall."

"When one is fitting a horse with a collar the animal should be in a natural standing position on level ground with his head held at the height maintained while at work. The collar, when buckled, should fit snugly to the side of the neck and its face should follow closely and be in even contact with the surface of the shoulders from the top of the withers to the region of the throat. At the throat there should be enough room for a man's hand to be inserted inside the collar."

MANY MATERIALS IN USE

"The styles of horse collars are created mostly by the use of different kinds of material in their construction. Such materials as heavy duck, ticking, and leather are used either alone or in various combinations. All-metal collars may also be purchased, but are not so much used. The stuffing used in horse collars is coarse material, such as rye straw, curled hair, and cotton fiber.

"The all-leather collar, stuffed with seasoned rye straw, with a layer of curled hair in the facing, is a satisfactory kind. The cost is somewhat greater than on the collar made wholly of duck or ticking with cheaper stuffing, but the service given by this collar is usually so far ahead of the latter that the all-leather style proves to be the cheapest in the end.

"The collar selected should be examined carefully every time it is going to be used. All dirt and sweat found on the face of the collar should be cleaned off and the surface which comes into actual contact with the neck and shoulder of the horse should always be smooth and hard.

CARE FOR ANIMAL'S SHOULDER

"In order to prevent galls and more serious conditions it is not enough to give close attention to the selection and care of the collar. The shoulder of the horse should always be watched and given special care when the animal is at steady work. If the selection of the collar has been properly made and all other things in regard to this piece of harness looked after, the care of the animal's shoulder is a simple process. Under these conditions washing the shoulder with soap and pure water, after the harness has been removed at the end of a day's work, and thoroughly drying the part by rubbing it with clean cloths, is all that is necessary.

"The colt that is being broken to work in the spring should be started in on light draft while the weather is still cool, so that his shoulders, as well as the rest of his body, may be toughened and put into good working condition before the hot summer weather starts.

"Other common causes for diseased neck and shoulders on a horse where preventive measures should also be applied are implements with excessive tongue weight, or excessive movement in the tongue when the implement is being drawn, sidedraft, a free going animal hitched to a slow or lazy one, walking on a ridge or in a furrow that is too narrow, which may cause the animal to slip constantly or sidestep and in this way injure his shoulders. Besides, the neck and shoulders are exposed to the usual number of mechanical or accidental injuries."

The agricultural college of the University of Maine made a flower show one of the chief features of farmers' week this year.

THE KANSAS INDUSTRIALIST

Volume 43

Kansas State Agricultural College, Manhattan, Wednesday, October 18, 1916

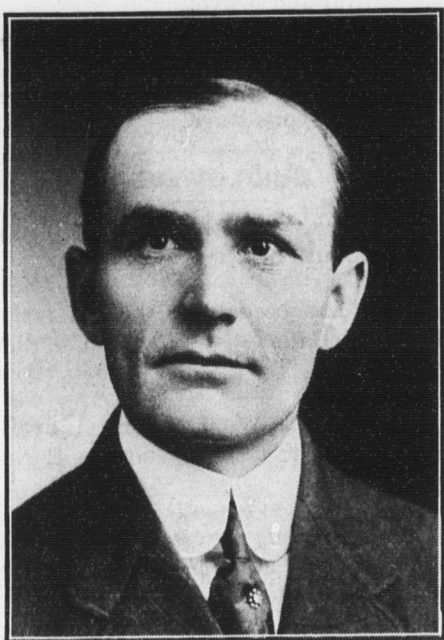
Number 4

FARMS TO YOUNG MEN

DEAN JARDINE PLEADS FOR ABOLISHMENT OF LAND SPECULATION

Would Have Credit System Adopted Whereby Laborer Could Rise to Position of Owner—Restrict Ownership as in New Zealand

Legislation looking towards the abolishment of land speculation, and the establishment of a credit system which would enable young men to rise from laborers to owners and operators of farms, was urged by W. M. Jardine, dean of agriculture in the Kansas State Agricultural college, in an address Tuesday before the National Irrigation congress at El Paso, Tex. When land values take on speculative character, he holds, the amount possi-



DR. W. M. JARDINE

ble to be owned by one man should be limited.

Dean Jardine will preside and speak tomorrow at the International Farm congress, which will meet in El Paso. Of this organization he is president.

"We must have a credit system designed to meet the peculiar conditions of agriculture," said Dean Jardine. "Existing credit institutions, including the new land banks, are inadequate to remedy the basic conditions which cause tenancy."

"Credit can in no way eliminate the speculative character because values can increase and do so sufficiently to offset the help of cheaper money. For those who are interested in doing away with the evils of tenancy, to expect fulfillment of their purpose by resort to better credit facilities alone, brands them as economic 'quacks' just as it labels for a medical 'quack' any doctor who prescribes a single remedy for all the ills of every patient."

CREDIT IS PARTIAL REMEDY

"Credit alone cannot eliminate tenancy in the face of high speculative values. It is, therefore, only a partial remedy to look to credit. The unfortunate thing about better credit, moreover, is the fact that it can do little unless linked to some scheme for coping with speculative values."

"For many years the United States has carried individual rights to such an extreme that social welfare has been cast in the background and with it the responsibility of maintaining soil fertility has almost been lost sight of. Speculation has been allowed to run free until the welfare of the nation is threatened."

"Either we will decide that some measure of limitation of individual rights must be established and the evils of speculation thus confined, or else we will continue to rob the land of its soil elements. The annual decline in productivity which we are paying as a price for freedom to traffic in land for its speculative values is a tremendous one. It is a tax in the form of

reduced food supplies and diminished productive power for the future.

DEAL WITH SPECULATION FIRST

"According to the cumulative experience of New Zealand, Australia, Denmark, Germany, and France, the only policy which will permit the linking of more of our young men with the soil as occupied owners, is to deal with speculation first and credit second. We must first limit the amount of land which one man can be permitted to own whenever land values take on a speculative character. This was done in New Zealand with universal approbation after the experiment had been placed in operation. The limitation is 640 acres of first class land."

"In order that the land of all persons owning more than 640 acres be transferred to persons who will occupy it, a system of state repurchase is necessary. This should be administered by a nonpartisan commission. Then in order to prevent speculation from entering into the transaction when the government buys the land from private parties, there must be a thorough system of land valuation administered by a nonpartisan board of experts and their valuations made the basis both of taxation and repurchase. The value of lands would thus tend to come down to their use for farm purposes in order that the owner avoid the perpetual payment of exorbitant taxes. In turn, the speculative value of such lands would be at the minimum when repurchase was made."

YOUNG MEN LEAVE SOIL

"Added to these measures for abolishing speculation, a credit system, shaped to meet the needs of farmers, would enable young men to rise consistently from laborers to owners and operators of farms. The government would conduct a policy of buying lands at a price based on productive values, selling them to energetic young men on the amortization basis, or leasing them in case the men were without adequate funds for purchase. Only by such a scheme can the benefits of ownership be conferred on the individuals and the nation, and at the same time the evils of tenancy be reduced to a minimum."

"The road which the country is traveling at the present time is leading a continually increasing proportion of young men away from the soil to other occupations. Since 1820 a steady fall in the proportion of the population in agriculture has taken place. At present only 32.9 per cent of the population is agricultural, while in 1820 it was 87.1 per cent, but that is by no means as alarming as the fact that of those who are staying in agriculture only one in five find any prospect of farming for themselves."

"From 1900 to 1910 the agricultural population increased by slightly more than 2,000,000, of whom only 300,000 were farmers, while more than 1,600,000 were farm laborers. In 1900 there was a hired farm laborer for every three farmers, while in 1910 there was one for every 2.3 farmers."

"These figures show one thing—that it is growing more and more difficult to become a farmer and that most of those who want to stay on the farm must be content to do so as mere farm laborers."

MOST YOUTHS LACK MONEY

"The decisive period in a young man's life comes chiefly between his twentieth and twenty-fourth years. He decides to leave or stay on the farm at this time. In the United States there are in the country districts two and a quarter million young men of this age most of whom find it unprofitable, yes, impossible to stay on the farm. Why is it? What conditions make this deplorable situation? Are the conditions becoming better or worse?"

(Concluded on Page Four)

WHEN TO REPOT PLANTS

CONTRARY TO POPULAR BELIEF, FALL IS NOT RIGHT TIME

Healthy Specimens May Be Brought in from Out of Door Gardens, However, Says Professor Ahearn—How to Handle Them

Contrary to common belief, the best time to repot plants is in the spring or when the new growths start. Only in exceptional cases do house plants require potting in the fall or winter, asserts M. F. Ahearn, professor of landscape gardening in the Kansas State Agricultural college.

"This is particularly important," said Mr. Ahearn, "in the case of palms, ferns, and rubber plants, as these plants are resting during the winter months. Soft wooded plants like the geranium and coleus may be fed with liquid fertilizer, rather than repotted in the winter."

GET PLENTY OF ROOTS

"When potting plants in the fall which have been out of doors in flower beds all summer, select only stocky, healthy plants. Dig them carefully so as to secure as many roots as possible. If the soil is clayey, it must be neither so wet that it is muddy and the roots cling together, nor so dry that the dirt crumbles away from them."

"The right condition of the soil can be obtained by thoroughly watering it at least five hours before potting. If the plants are growing in sandy soil it is better to have the soil rather dry, for then more of the working roots can be saved than if it is wet. After potting, thoroughly water the plants and set in a shaded place. Syringe the tops every day until the new roots begin to grow, and then gradually inure them to the sunlight."

TOO MUCH SOIL HARMFUL

"The inexperienced person finds that his greatest difficulty is to remove the plant from its old pot. This is done easily by taking the pot in the right hand, and placing the stem of the plant between the middle and index fingers of the left hand. Then invert the pot and strike the edge sharply against the edge of the bench. The ball of earth will slide out easily, unless the earth is dry. In that case before attempting to remove the plant, immerse it in water until the soil has become damp."

"Do not work on the theory that the larger the pot and the more soil it contains, the thrifter the plant. It is not the amount of food available, but the amount assimilated that counts. Nothing in a plant's life can be more disastrous than overpotting."

WELL SELECTED RAM IS HALF OF FLOCK

A. M. Paterson Tells What Points Should Be Sought in Purchasing the Animal

A ram is half the flock. Get a good ram that will impress his desirable qualities on his offspring, advises A. M. Paterson, assistant in animal husbandry in the Kansas State Agricultural college.

"The ram must be strong in the points in which the ewes are deficient," says Mr. Paterson. "It is a known fact that like begets like, and if both the ewe and the ram are weak in the same points, these weaknesses will be intensified in the offspring."

"In the first place select a breed. Then decide on the amount that is to be paid for the ram. From \$35 to \$40 will buy a desirable ram. If it is possible visit the breeder, and select the ram; otherwise order from a breeder with a reputation for square dealing, and let him know the exact type of animal desired."

"In case the flock is small a ram lamb will be all right. In case there are more than 30 ewes the ram should

be 2 years old. The ram selected will depend upon the type of ewes in the flock. If the ewes are small and light boned, get a heavy weight and heavy boned ram. If they are coarse boned, rangy ewes, get a ram with more refinement."

In selecting the ram special attention should be paid to type, mutton qualities, and denseness of fleece, according to Mr. Paterson. Quality of mutton is the prime factor in the farm flock, and should receive the most attention. The fleece should not be forgotten, for not only will it be a source of income, but a good fleece will give a higher market value to the sheep."

The ram should be strong, active, and show strong masculine character. These points are important, for on them will depend to a large extent the number of lambs produced, and also their health and vigor."

The ram should stand up well on his feet, and his pasterns should be strong. The back should be strong and the ribs well sprung to give plenty room for heart and lungs."

AGGIE FOOTBALL TEAM EXPECTS TO BEAT K. U.

Low Score in Game at Nebraska Leads Fans to Count on Victory Over University

"Beat K. U." is now the slogan of the Kansas State Agricultural college football enthusiasts. While incidentally the Aggie squad expects to take a game from the Kansas State Normal eleven Saturday, the men are being primed particularly for the game at Lawrence the following week."

The fact that the Aggies held the Cornhuskers to two touchdowns last Saturday has inspired confidence. It is believed that by hard fighting K. U. can be trimmed."

"We were well pleased with the showing made in Lincoln," commented Coach Z. G. Clevenger. "The defensive work of the team was the feature. The offensive ability was offset by the defensive power of the Nebraskans. In the second half of the game we fought the Cornhuskers to a standstill."

"The Kansas State Normals played K. U. to a 13 to 0 score. We look for a hard game but we expect to win."

THINK OF WORK IN TERMS OF ENGINES, NOT HORSES

Farmer Will Get New Inventions if He Will Demand Them

The tractor can completely supplant the horse for all work on the farm only when the farmer ceases to think of work in terms of horses and begins to think of it in terms of engines, in the opinion of W. H. Sanders, instructor of farm motors in the agricultural college. If the farmer demands it the designing engineer will construct engines to do every task which the horse does today."

"Just as horse power in the past has supplanted the man with the hoe, so in the future the tractor will supplant the horse," says Mr. Sanders. "It took man many ages to realize that by using horse drawn machines he could greatly increase his efficiency. Today few men realize that the tractor is slowly taking the place of the horse for all manner of farm work. It is replacing the horse for the same reason that the horse replaced the slave—it is more efficient."

The advent of the tractor, believes Mr. Sanders, means changes in the methods of agriculture just as the working of horses has meant changes in methods since the work was done by slaves. Next spring, at least three traction companies will place upon the market engines designed especially for the cultivation of rowed crops. This is an indication of the trend of progress in the manufacture of tractors."

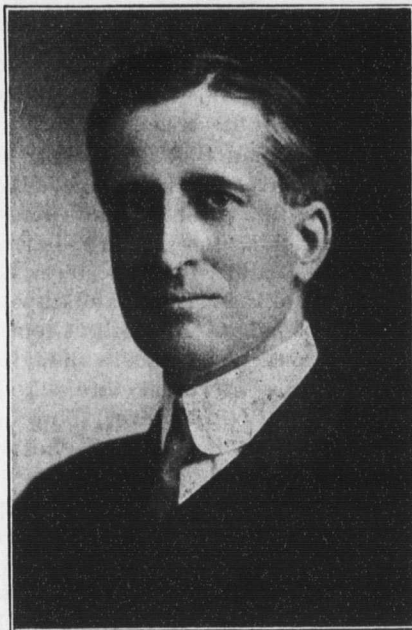
THEY STUDY IN PRISON

NEARLY 200 CONVICTS TAKE WORK UNDER COLLEGE DIRECTION

Old Barn in Penitentiary at Lansing Is Being Converted into School Shop—Women Interested in Home Economics—Courses at Leavenworth

Nearly 200 convicts are students in the home study department of the Kansas State Agricultural college.

An old barn at the state prison at Lansing is being converted into a shop where trades will be taught, such as carpentry and building, blacksmithing, steam boilers and engines, plumbing, gasoline engines, and practical electricity. Nearly 80 students send in regular lessons. Excellent work is being done and the convicts



GEORGE E. BRAY

express appreciation of the opportunity to study.

One prisoner who took the course in steam and gas engines while in the Kansas prison was, at the expiration of his sentence, turned over to the authorities of Colorado, where he is now serving a term for having broken parole before coming to Kansas. This man, because of the knowledge gained through correspondence study, is handling a steam shovel and doing efficient work with it in road building."

MAY LEARN PROFITABLE TRADES

"Formerly those who wished could learn to do special work in carpentry by correspondence and use the skill in doing repair jobs, or the prisoner working with an engine could take a course in steam boilers and engines or in gasoline engines," said George E. Bray, industrial engineer in the college division of extension. "Under the new plan a prisoner at work in the mines, for instance, may select a trade such as blacksmithing and be given an opportunity to learn it."

Last spring a commencement, with baccalaureate sermon, field day, class banquet, and other features characteristic of graduation, was held for the 31 men who had finished one of the extension courses offered by the department. Some of the events were observed by the women prisoners who, though few in number and mostly negroes, were enthusiastic in asking that they be given work in home economics."

FEW ARE FROM FARMS

The women, under the care of a matron, live in a cottage separate from the men's quarters, where it would seem that good work could be done and that the inmates on being released could be better able to live useful lives. Preparations are being made to enrol these women as students in home economics."

The fact that only 20 are enrolled for agricultural subjects is probably an indication that the rural population

(Concluded on Page Four)

THE KANSAS INDUSTRIALIST

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H. J. WATERS, PRESIDENT.....Editor-in-Chief
N. A. CRAWFORD.....Managing Editor
J. D. WALTERS.....Local Editor
ADA RICE, '95, M. S. '12.....Alumni Editor

Except for contributions from officers of the college and members of the faculty, the articles in THE KANSAS INDUSTRIALIST are written by students in the department of industrial journalism. The mechanical work is done by the department of printing. Of these departments Prof. N. A. Crawford is head.

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WEDNESDAY, OCTOBER 18, 1916

BLUE HAZE

It is in autumn that a blue haze so often hangs over the landscape. By day it gives the commonest objects—the brown fields, the great red barns, the tall white silos, the tree-surrounded cottages of the Kansas landscape—the touch of faery. As twilight comes on, the same blue haze turns the faint red west into a frowning, threatening presage, and covers everything in the world with the faint, ghostly shadow of fearfulness.

Such a shadow it was which once hung over the earth perpetually, but not in the world's autumn, rather in its springtime. The waste forests, the unresting, mist-hurling sea, the black thunder clouds, were beings of thought and feeling, desire and will—strange, shadowy beings that made men's hearts fail them for fear. The blue haze was a haze about the minds of men—yet it inspired picture and story and song never equaled for beauty or symbolic truth after the haze had passed away.

After all, how much of life is blue haze?

SENSIBLE REFORM

To remedy conditions, first find out exactly what is wrong with them. This is the invariable counsel of modern economics, sociology, and education.

Only recently, however, has this counsel been applied to the cities and towns—their industries, their health, their government. It has been applied by means of the survey.

"To sum up the survey in a few sentences," writes Shelby M. Harrison, director of surveys and exhibits for the Russell Sage Foundation, "it is an implement for more intelligent democracy, its chief features or characteristics being the careful investigation, analysis, and interpretation of the facts of social problems; the recommendation and outlining of action based on the facts, and the acquainting and educating of the community not only to conditions found but to the corrective and preventive measures to be adopted. The survey lays emphasis, moreover, upon the importance of studying problems in their various community-wide relations and urges cooperative action on a community-wide basis. It deals with the whole district and endeavors to lead individuals to think in terms of the whole. It is the application of scientific method to the study and solution of social problems, which have specific geographical limits and bearings, plus such a spreading of its facts and recommendations as will make them, as far as possible, the common knowledge of the community and a force for intelligent coordinated action."

The intelligent application of the survey to municipal conditions is eliminating the waste due to employment of plans which must later be dis-

carded because they do not fit the conditions.

In rural districts, it would seem, is the next great field for the survey. The principle is now being carried out by the agricultural college in studying operations on Kansas farms. It may effectively be carried out still farther in a study of educational, social, and religious conditions, all of which are essential factors in a permanent, successful rural community life. The survey is the method of sensible reform.

THE EDITOR AS "WE"

"Why does an editor always use the word 'we'?" asked a boy.

"Oh," replied his father, "he wants to give the impression that there is a whole room full of them, so some irate reader will not come in and 'clean him up.'"—Nebraska Farmer.

STANDARDIZATION

It is interesting to learn from a recent announcement of its purposes (as published in our last issue) that the federal office of markets has taken up the study of standardization and grading of farm products. We believe there is no more important work to be done to facilitate and economize distribution. But classification and grading, to be most effective in facilitating trading, involves an inspection service. Can we expect the government to provide this in all the great markets and for all the multitudinous forms of farm products? If not, a great work remains to be done here through trade organizations. So far as this work has progressed in the great staples, butter, cheese, eggs, and poultry, we have a variety of standards and diverse gradings. Uniformity is very desirable and should not be difficult to attain. What has become of the movement to this end set on foot at the last national convention with such unanimous acceptance of its importance and necessity?—New York Produce Review and American Creamery.

THE ORIGIN OF THE BAGPIPE

Neither Scotland nor Ireland can claim to have invented the bagpipes. Greeks, Romans, Assyrians, and Chinese all played bagpipes of sorts long before the time of Christ, and the instrument actually figures on one of the coins of Nero, who may have played it. The Breton bignon, the Calabrian zampogna, the German sackpfeife and the French cornemuse are all bagpipes under different names.

It was actually a Scotsman, and no less a man than the lord advocate of the time, who publicly declared 50 years ago that "the bagpipe is an English instrument, essentially English; the English were the original bagpipers." He pointed out that, while Shakespeare often speaks of bagpipes, he never does so in "Macbeth," and that it is in Lincolnshire and Yorkshire that he localizes the pipes. To Chaucer and Spenser also they are English. James IV and other Scottish kings paid for "Ingles pyparis" at their court, while Edward I, Edward III, Henry VI, and Henry VIII seem to have had native pipers. The Highlanders never used the pipes in war before the fifteenth century; the harp was Scotland's instrument.—The London Chronicle.

LAND AND THE AUTOMOBILE

A prominent Kansas City realtor, visiting Minneapolis, recently declared that the automobile is a rival of the real estate business, because it absorbs money that might otherwise go to the purchase of a home. Men who might buy homes, he says, buy automobiles and live in flats.

The tendency of the city dweller is to rent living quarters rather than to buy a home. Such quarters are really quarters, not units. The detached house is a unit. Quarters do not furnish the freedom of a full-fledged home; but the automobile does add to the quarters a certain element of freedom during a portion of the year, and this combination is a little nearer to the unit home than are the quarters without the automobile. In this measure the automobile may serve to dull the edge of keen desire for an owned home.

The automobile is, however, a logical competitor of the summer outing property. The every-evening ride through the open country, the longer half-holiday and week-end trips and the yet longer gypsying tours made possible and attractive by the bedroom trailer all bid strongly as recreations against the shore tent and the forest shanty. They have even had marked effect in weakening the demand for the more substantial summer cottage. On the other hand, the automobile often makes it possible for a family to live in a suburban or country district, while its head goes to business in the city. In this case the automobile helps the sale of "outside property."

But the automobile as ordinarily used offers the love of looking at much land in place of the love of

The carpenters are at work removing a part of the west wall in the secretary's office to make a place for new postoffice boxes and window.

M. A. Carleton, '87, spent a few days with college friends the first of the week. He plans to teach this year in Southwestern university, Wichita.

Another set of planes have been received from the Gage Tool company of Vineland, N. J., to be awarded as a prize to the best beginner in woodwork.

The special classes in domestic science have a pleasing array of canned fruits, pickles, and preserves, the results of their handicraft in the past four weeks.

G. V. Johnson, '91, after being sick with mountain fever for five weeks at Springer, N. M., returns to Kansas to

Setting Our Faces Natureward

L. H. Bailey

THE currents of civilization tend always to take us out of our environment rather than to fit us into it. We must recast our habits of thought so as to set our faces natureward. This is far more important than any effort at mere simplicity or toward lopping off the redundancies: it is fundamental direction and point of view.

The outlook to nature is the outlook to what is real, and hearty, and spontaneous. Our eager civilization prematurely makes us mentally old. It may be true that the span of man's life is increasing, but at twenty we have the knowledge and the perplexities that our grandfathers had only at forty. Our children may now be older when they are graduated from school, but the high school course of today is more complex than was the college course of fifty years ago. All this has a tendency to lessen the years of free and joyous youth. You have only to see the faces of boys and girls on your city streets, to discover how old the young have grown to be. In home and school our methods have been largely those of repression: this is why the natural buoyant outburst that I saw on the city thoroughfare challenged such instant attention and surprise. We need to emphasize the youthful life.

Therefore, I preach the things that we ourselves did not make; for we are all idolaters,—the things of our hands we worship. I preach the near-at-hand, however plain and ordinary,—the sky in rain and sun; the bird on its nest and the nest on its bough; the rough bark of trees; the frost on bare thin twigs; the mouse skittering to its burrow; the insect seeking its crevice; the smell of the ground; the sweet wind; the leaf that clings to its twig or that falls when its work is done. Wisdom flows from these as it can never flow from libraries and laboratories.

possessing a little land. Which is the more profitable in terms of citizenship and substantial enjoyment no one will question. There is a real advantage in knowing from the standpoint of a spectator a large area; but this advantage will not compare in value with the intimate knowledge of a bit of soil from the standpoint of an owner.

Love of locality, love of a certain spot of earth, because it is home and because it has been handled as productive soil or as landscape, intelligently and affectionately, is one of the cardinal virtues of citizenship; one of the sure supports of good government. No interest in the passing show, however keen, can have the value for the individual or for society that is inherent in the love of one's own home grounds.—Minneapolis Journal

A QUARTER CENTURY AGO

Items from The Industrialist of October 17, 1891

G. J. Van Zile, '90, orders his paper sent to Carthage, Ill., the home of his parents.

Miss Ada Rice, second-year in 1890-'91, is visiting old classmates and friends at college.

Regent Hessin has been out of the state for more than a week past, but returned yesterday.

The Webster and the Hamilton societies hold no session this evening on account of the political meeting in town.

Mr. McKeen of Russell has moved into Professor Lee's house on the hill to give his daughter the privileges of the college for a few years.

gain a lower latitude. His postoffice is Cedar Vale.

Professor and Mrs. White took possession of their new house on Wednesday of this week. It is a beauty outside and in, doing credit to both planners and builders.

It is hoped soon to make provision for athletic exercises for the young women, who are at present forced to content themselves with such plebeian gymnastics as sweeping, bed making, etc.

The committee on athletics have recommended, and the recommendation has been adopted, that tennis, baseball, and "sich" be not played on the college grounds during recitation hours.

The college herd is enriched this week by the addition of two Jersey cows of cattle club record, and excellent individual merit. They were purchased by Professor Georgeson at the sale of the Murphy herd in Kansas City.

Miss Lillie Bridgeman, '86, writes from the California State university at Berkeley, where she has begun a three years' course in literature and languages, that she is the first young lady who has begun the course for the degree of Ph. D. at that place.

Superintendent A. S. Olin of Kansas City, Kan., has gone to Worcester, Mass., to study psychology under G. Stanley Hall a few months. Mr. Olin will also study the school systems of eastern cities from personal observation. The superintendent is a brother of Prof. O. E. Olin of the Kansas State Agricultural college.

THE BROKEN SOLDIER

Katharine Tynan

The broken soldier sings and whistles day to dark,
He's but the remnant of a man,
maimed and half-blind;
But the soul they could not harm goes singing like the lark,
Like the incarnate Joy that will not be confined.

The Lady at the Hall has given him a light task;
He works in the gardens as busy as a bee;
One hand is but a stump and his face a pitted mask;
The gay soul goes singing like a bird set free.

Whistling and singing like a linnet on wings,
The others stop to listen, leaning on the spade;
Whole men and comely; they fret at little things,
The soul of him's singing like a thrush in a glade.

Hither and thither hopping, like robin on the grass,
The soul in the broken man is beautiful and brave;
And while he weeds the pansies and the bright hours pass,
The bird caught in the cage whistles its joyous stave.

SUNFLOWERS

Let's see. What was it Mr. Villa lost—an arm or a leg?

What has become of the old fashioned girl who dressed warm in the winter?

Now that the World's Series is over, we can turn to politics and the European scrap.

The reason why we still suspect that money brings happiness is that we are dead sure that poverty does not.

It looks as if the pedestrian will soon become extinct. Another season or two and Fords will be cheaper than shoes.

We are pleased to note that two well known makes of typewriters won the championship at the New York Business show recently. It is a pity that they could not all win.

We are getting sick of the war and the political campaign. Will not some unemployed millionaire with a capacity for incipient paranoia kindly put a hole through somebody?

WHAT THE DOTS MEAN

When you see . . . three little dots . . . such as these . . . in the stuff of a modern versifier . . . even in our stuff . . . it means that the writer . . . is trying to suggest something rather . . . well, elusive, if you get what we mean . . . and the reason he suggests it instead of expressing it . . . is . . . very often . . . because it is an almost idea . . . instead of a real idea . . .—New York Evening Post.

AMERICANS MAKE DYESTUFFS

American manufacturers are now making three-fourths of the 29,000 tons of dyestuffs which were consumed annually in this country until the war began in Europe. Dr. Thomas Norton, dye expert of the federal bureau of foreign and domestic commerce, revealed this fact at the American Chemical society's conference on dyestuffs. By next summer, Doctor Norton predicted, the entire amount will be produced in the United States.

He aroused great interest by announcing the government bureau has prepared a complete census of the 5,679 colors used here, with prices, market conditions, and other information which will be available soon for the manufacturers. Dye experts said that the information, gathered painstakingly by the federal investigators of dye conditions throughout the past year, will widen the scope of dyemakers so much that all the coal tar obtainable in this country will be needed.

AMONG THE ALUMNI

E. J. Abell, '95, of Riley was a college visitor last week.

Miss Eva Townsend, '16, is teaching in the high school at Neodesha.

Miss Florence Dodd, '16, is teaching in the high school at Nickerson.

Archie Marble, '15, is teaching in the high school at Wenatchee, Wash.

W. P. Dietz, '16, is teaching botany, agriculture, and manual training at Sedgwick.

Miss Virgie McCray, '11, is teaching home economics in the Mt. Pleasant (Tex.) high school.

R. A. Oakley, '03, who is in the department of agriculture, Washington, D. C., visited college friends last week.

Miss Virginia Sherwood, '12, is principal of the high school at Codell, and reports that she is enjoying her work.

Miss Emily Wilson, '16, is teaching a variety of subjects in the Everest high school. She has work in Latin, history, and mathematics.

Miss Jessie Allen, '08, who recently resigned her position with the printing department of the college, is taking a course in the Salina Business college.

Idella, the six months old daughter of Mr. George L. Campbell, '11, and Mrs. Neva (Wallis) Campbell, won first prize, scoring 100 per cent, in the better baby contest held in White City.

Miss Hazel Shellenberger, '14, is teaching domestic science in the high school at Crosby, Minn. She is well pleased with her work and the prospects for the future growth of the school.

F. Joe Robins, '13, has charge of the agriculture and farm mechanics work in the Crawford county high school at Cherokee. His work in the past year has been exceptionally successful.

A letter from Carl E. Rice, '97, Manila, P. I., states that he hopes to return to Kansas this winter for a visit. He is still in the employ of the customs house, department of immigration.

Miss Ina E. Holroyd, '97, received the degree of bachelor of science in education from the State Normal school, Emporia, in the summer. Miss Holroyd is instructor in mathematics in the college.

Mr. Victor Emrick, '95, and Mrs. Mary Willard Emrick, '95, have moved from Portland, Ore., to Omaha, Nebr., where Mr. Emrick is in the Union Pacific railway offices. Their address is 2710 Decatur street.

P. A. Cooley, '06, attended the summer session in Columbia university, New York, and is now assistant principal of the high school at Mitchell, S. D. He has charge of the department of commercial art.

Miss Ruth Arbuthnot, '15, is beginning her second year of work in the Germania (Iowa) high school. She is teaching domestic art, Latin, and history. Work in domestic science will begin after the holidays.

In a recent issue of the Country Gentleman is an exceedingly interesting article on "Some of Grandmother's Good Things," by Nellie Sawyer Kedzie Jones, '76. She promises to discuss the subject of "Entertaining on the Farm" in her next article.

Earl M. Dobbs, D. V. M. '16, has a fellowship at Cornell university, Ithaca, New York. He writes that he is well pleased with the outlook for the year. He is rooming with W. A. Hagan, D. V. M. '15, who is assistant to Doctor Williams.

Miss Gertrude Wunder, '15, is instructor in home economics in the Grand Prairie seminary, Omarga, Ill. The seminary is a private secondary school affiliated with Northwestern university and is situated 80 miles south of Chicago.

C. W. Hickok, who completed work for the degree of bachelor of science in civil engineering in the summer school, was in town last Wednesday and Thursday. He is employed as computer on the valuation of common carriers for the interstate commerce commission.

W. O. Peterson, '97, is superintendent of the schools of Soldier, where there is one of the largest high schools in Kansas in proportion to the population. The town has 400 people and the high school an enrolment of 75. Mr. Peterson is teaching a class of 39 students in agriculture.

Robert Bruce has received the degree of bachelor of science cum laude from Harvard university, after completing the four year course in three years, and has entered the employ of the American Telephone and Telegraph company. He is the son of Edmond E. Bruce, examiner for the interstate commerce commission, and Mrs. Ida (Turner) Bruce, '89. The Bruces reside at 2049 Sixty-third street, Brooklyn, N. Y.

BIRTHS

Born, to Mr. R. A. Seaton, '04, and Mrs. Gay Perry Seaton, '14, of Manhattan, on October 13, a son, James Newell.

Born, to Mr. J. C. Cunningham, '05, and Mrs. Alice (Ross) Cunningham, '03, Ames, Iowa, on July 2, a daughter, Helen.

MARRIAGES

CURTIS-PERRILL

Miss Esther Curtis, a former student in the college, and Mr. Dale Morrison Perrill, '13, of Cincinnati, Ohio, were married in Manhattan Sunday morning, October 8. The Rev. J. M. McClelland, pastor of the Methodist church, officiated.

Mr. and Mrs. Perrill are spending a few days in Kansas City before going on to Cincinnati, where Mr. Perrill is advertising manager of the Shipley and Lodge steel works.

ALUMNI DINNER

The annual dinner for alumni of the college at the Kansas State Teachers' association will be held at the First Baptist church at noon Friday, November 10. This is the same arrangement as that of last year, when it proved more satisfactory than a night banquet. Tickets will cost 50 cents each.

LOSH TO WASHINGTON

A. R. Losh, '10, who for several years has been assistant state engineer, has gone to Washington, D. C., where he has accepted a position as engineering economist in the federal office of public roads and rural engineering. His work here has been highly efficient, and he has been popular about the college and in the state.

STORE VEGETABLES AND CUT LIVING EXPENSES

Large Quantities Can Be Kept Easily in Cellars or in Pits in the Garden

Be prepared to meet the high cost of living by storing fruits and vegetables now, is the advice of M. F. Ahearn, professor of landscape gardening in the Kansas State Agricultural college.

"Do not pay winter prices for fruits and vegetables," said Professor Ahearn, "when by a simple reorganization of the cellar or some digging in the garden, storage room can be provided for the preservation of large quantities of this class of food."

"If the fruit shrivels or becomes spongy and decays the fault in most cases can be traced to the storage room and may be corrected wholly or in part. The cellar must be well ventilated if fruit is to be kept successfully for any length of time. Temperature and humidity are factors quite as important as ventilation. The best temperature for fruit is 33 degrees or a little above."

"It is not well to allow much fluctuation in the temperature. In the farm cellar uniformity of temperature is maintained by means of ventilation,

which should be watched closely. While the weather remains warm in the fall, the windows are closed by day and opened by night.

"Apples may be packed either in barrels or in boxes. The preference is usually given to the boxes. In the case of apples that are to be kept for a considerable time it is a good plan to wrap each one separately in a piece of paper."

Favorable conditions of moisture and temperature are obtained by burying the fruit in pits, points out Professor Ahearn. To prevent apples from tasting of the earth they should be placed in boxes, barrels or other containers which keep them from direct contact with the soil, or the pit may be lined with boards.

"Storage requirements for vegetables differ widely. The sweet potato and the squash are kept successfully only when the temperature is high and constant and the humidity is low. Root crops and cabbage can best be stored in pits. For storing cabbage in this manner the heads are pulled with the roots and leaves attached and placed upside down. Earth is placed on the pile until the plants, including the roots, are entirely covered."

"Beets, carrots, turnips, rutabagas, kohlrabi, and Irish potatoes may also be stored in outdoor pits, but they must be covered sufficiently to prevent freezing. One of the best ways of handling these crops is to place them in a conical pile and cover them first with six or eight inches of hay or straw, then with earth to a similar depth. If extremely cold weather is expected, a layer of manure should be placed outside the earth."

WIRELESS MESSAGES COME FROM PANAMA CANAL ZONE

College Gets Reports from Many Distant Stations—Training for Students

The Kansas State Agricultural college is now prepared to receive wireless messages from all parts of the country.

Weather and time reports are received daily from Arlington, Va. The messages are taken here at 10 o'clock in the morning and at 8 o'clock at night. They travel at the rate of 187,000 miles a second, making it possible to receive them almost instantaneously. Messages are received from the Panama Canal zone, the United States naval training station in Illinois, and from New Orleans.

Daily weather forecasts sent out from the college are of real value. Wireless stations in several Kansas towns receive the forecast several hours in advance of the copy sent by mail.

The station is operated by the physics and military departments. The military department has a secret code for use in time of war. Mondays, Wednesdays, and Fridays, classes are held in which wireless is taught. Students receive their training under a commercial operator licensed by the government.

FLOWERS THAT BLOOM IN THE SPRING, TRA-LA-PLANT 'EM

Now Is the Time to Put Out the Bulbs, Says Albert Dickens

Lovers of flowers in Kansas are reminded that now is the time to set out spring blooming bulbs.

"Bulbs should be planted from three to five inches in depth, depending upon the nature of the soil and the size of the bulbs," points out Albert Dickens, professor of horticulture in the Kansas State Agricultural college. "Deep planting is preferable in sandy or light soil, but in heavy loam two or three inches is enough. A liberal amount of well rotted manure should be worked into the soil before planting, and a light mulch should be applied for the protection of the bulbs during the winter months."

"Adequate drainage is essential in pot culture. Plant the bulbs one inch below the surface, water them thoroughly and put them away in a dark cellar or bury pot and all in the garden, covering the pot under eight or 10 inches of soil. In six or seven weeks the bulbs may be brought into the house."

OFFERS PRIZE FOR PLAY

COLLEGE DRAMATIC CLUB TO PRESENT PRODUCTION BY STUDENT

Purple Masque Seeks Farce or Comedy—Plan Is Followed in Other Institutions—There's Much Dramatic Talent Here

"I hold the world but as the world, Gratiano, A place where every man must play a part."

—The Merchant of Venice.

The Purple Masque club is adapting this quotation to college life in its endeavor to make Kansas State Agricultural college a place where every student must play a part—those parts, moreover, to be written by some student in the college.

The club, an honorary organization composed of persons selected from play casts after the play has been produced, is offering a prize of \$50 for the best original farce or comedy written by a student. The cast will be selected from the entire student body and the play produced next spring, probably in commencement week.

LOOKS FOR STANDARD PLAY

"I consider it one of the most important steps taken by the Purple Masque," Dr. J. G. Emerson, head of the department of public speaking, said in discussing the plan. "It is in line with the policy of the organization, that is, to stimulate things dramatic in the school."

"There is no reason why we cannot find in a student body of the size and intelligence of this, some one who has genius for play writing, and we hope that the results will be so far from the mediocre, average impromptu college farce that the Purple Masque will be glad to produce it as one of the real standard productions of the year."

NEW STUDENTS DO WELL

Dramatic clubs of other schools have been and are offering prizes of a similar nature. Ames for years has carried out this plan successfully. Leland Stanford, Michigan, and Chicago universities—all have this policy.

Charles Adamson, who last year took the part of Sam Graham in "The Fortune Hunter," Miss Velma Carson, a sophomore girl with an unusual instinct for impersonation; James Branham, who played the lead in last year's play; John Mussil; Chester Morse; Oscar Steanson; William Catton; E. A. Herr; and R. L. Cooper, all of "The Fortune Hunter" cast, are in school again this year, and with the new material, which is showing up creditably in the classes, the play should be well staged.

HORSE MUST WORK WELL IF FARMER GETS PROFIT

Modern Agriculture Depends as Much on Animals as on Human Factor, Says Professor Grimes

The modern farm depends as much upon the efficiency of the horse as upon human labor. Horse labor is the heavy item of expense in the production of a crop, asserts W. E. Grimes, assistant professor of farm management in the Kansas State Agricultural college.

"The cost of keeping a horse for a year varies from \$75 to \$125. About two-thirds of this cost is for feed, the remaining one-third consisting of the interest on the investment, depreciation, cost of shelter, insurance, and taxes."

"The cost varies to a certain extent with the conditions under which the horse is kept. The more a horse works the cheaper the cost of one hour's labor. On a well managed farm the horse seldom works more than 50 per cent of the time it could work, and on a poorly organized farm the horse often only works 10 to 20 per cent of the maximum time."

"On a well managed farm a horse averages 1,672 hours of labor for the year, at a cost of 7.2 cents an hour. On a poorly managed farm of the same size where more horses are carried than are required, each horse averages only 804 hours of labor for the year at a cost of 15 cents an hour."

"Reduction of the cost of horse labor may be brought about by the use of more brood mares. This cost may also be reduced by distributing the horse labor as nearly as possible throughout the year."

"Economic methods of management of horse labor cannot be so determined as to apply to every special problem, which may arise on farms under various conditions. The farmer must work out details to fit his special case."

KANSAS MEN SECOND IN JUDGING DAIRY CATTLE

College Team Ranks Second in List of 18 Institutions—Dawson Takes Special Honors

The Kansas State Agricultural college dairy team carried off second honors in competition with 18 other states in the judging contest at the National Dairy show at Springfield, Mass. The team won first prize in judging Guernsey cattle.

J. R. Dawson, R. E. Terrill, F. S. Turner, seniors in dairy husbandry, comprised the team. They were accompanied by J. B. Fitch, associate professor.

Mr. Dawson won first individual honors in judging Guernsey cattle and received a gold medal from the Guernsey Cattle club. Mr. Dawson ranked fifth in the judging of all breeds and won a gold watch fob, the gift of the National Dairy show.

The four dairy breeds judged were the Jersey, the Guernseys, the Ayrshire, and the Holsteins. Of the 18 states represented the ranking was as follows: Nebraska, Kansas, Iowa, Missouri, Massachusetts, New Hampshire, South Dakota, Pennsylvania, Maine, New York, New Jersey, Ohio, North Carolina, Rhode Island, Connecticut, Virginia, Delaware, and Maryland.

This is the second time the Kansas team has won the silver loving cup, presented by the J. B. Ford Wyandotte Dairy Cleaners company. The Guernsey Cattle club presented the team with a silver loving cup and two large pictures of famous Guernsey cattle.

"The teams from the middle west walked away with all the prizes," said O. E. Reed, professor of dairy husbandry in the college, yesterday. "This was unexpected, as the dairy prizes usually go to the east, which is considered more of a dairy country."

The contributions received to help send the dairy judging team to Springfield show were as follows:

Holstein breeders—Ben Schneider, Nortonville, \$5; P. W. Enns, Newton, \$1; H. B. Cowles, Topeka, \$5; E. S. Engle and Son, Abilene, \$1; W. R. Stubbs, Lawrence, \$25; C. W. Dingman, Clay Center, \$5; Holstein Breeders' association, \$15.

Guernsey Breeders—Conway F. Holmes, Kansas City, Mo., \$10; R. C. Krueger, Burlington, \$2.

Jersey Breeders—Albert Dickens, Manhattan, \$2; R. J. Linscott, Holton, \$10.

Creameries—Wichita Creamery company, Wichita, \$15; Concordia Creamery company, Concordia, \$10; Merritt-Schwier Creamery company, \$15; Helvetia Milk Condensing company, \$20; Beatrice Creamery company, \$30; Belle Springs Creamery company, \$20.

Former members of dairy judging teams—D. Branson, Manhattan, \$1; R. O. Swanson, Waterloo, Iowa, \$3; H. E. Dodge, Salina, \$5; A. W. Aicher, Denver, Colo., \$5; C. S. Goldsmith, Topeka, \$5; K. B. Musser, Storrs, Conn., \$5; R. A. Cooley, Abilene, \$1; Roy M. Phillips, Pullman, Wash., \$5.

Agricultural journals—Mail and Breeze, \$10; Kansas Farmer, \$10.

Others—O. E. Reed, Manhattan, \$5; J. B. Fitch, Manhattan, \$5; Students' Dairy club, Manhattan, \$15.

Beginning November 1, the transportation of 90 per cent of the mail by railroad will be on a space instead of a weight basis. The change is to be experimental, the interstate commerce commission making final decision on the subject.

KANSAS FARMING NEEDS A BUSINESS ANALYSIS

VARIOUS SYSTEMS OF AGRICULTURE IN PROGRESSIVE COMMUNITIES REQUIRE SURVEYS TO DETERMINE PROFITS—EXPERIENCE WITH DAIRY AND DIVERSIFIED CROP PROBLEMS

Systematic business analysis is one of the things Kansas farming most needs. This is the belief of Harry Umberger, supervisor of demonstrations, division of extension, Kansas State Agricultural college, and a practical farmer of wide experience.

Mr. Umberger points out that farming is developing rapidly in progressive communities and that many questions consequently arise as to the relative value of different systems of agriculture. It will not take long to settle such questions, he declares, if right methods are followed. What is needed is a careful survey.

WHAT BREEDS ARE BEST?

"No question," said Mr. Umberger, "has ever arisen more constantly in agricultural communities, especially in those which are changing from general stock farming to the more concentrated dairy industry, than the relative profitability of the various breeds of cattle. In any community where the producing of cream and butter is becoming an important industry the advisability of spending time and money in obtaining some particular dairy or dual purpose breed is an open question. Well informed farmers will maintain that it is more profitable to keep scrub or dual purpose breeds on such farms than to invest in one of the strictly dairy breeds. The contention is generally that the greater value of the calves produced from dual purpose cows will offset the decreased amount of milk produced. On the other hand, other men equally well informed believe in using only the dairy breeds for commercial dairying.

"Individuals sometimes have obtained figures covering only instances or at best only a relatively short period of time, and then no averages are obtained sufficient to eliminate the factor of individual management. To secure definite and dependable conclusions a unified community effort must be made. A farm to farm record must be made before absolutely dependable community averages can be obtained.

FARM BUREAUS MAKE SUCCESS

"County farm bureaus have been used particularly successfully in this work. They furnish a representative membership usually well distributed and composed of farmers interested in solving such problems. Their influence helps gain the willingness of other farmers to cooperate and thus add to the accuracy of the needed information.

"The dairy question was answered by a farm management survey made by the Leavenworth county bureau in the southern part of that county. Seventy-eight farms in this area were visited. Among these were found men who made good profits using any one of the several common dairy or dual purpose breeds. This work showed, however, that the average farmer who had dairy breeds made nearly \$250 net profits per year more than the average man who used dual purpose or scrub breeds of cattle as a dairy herd. The 37 farms having scrub and dual purpose breeds averaged \$237 labor income, while the 22 farms having dairy breeds of cattle averaged \$486 labor income.

EXCEPTIONS DUE TO INDIVIDUAL

"This does not necessarily mean that in every case the man who had purebred herds of dairy breeds always made more than the man that had scrub herds. There are instances, of course, where a producer of scrub stock is exceeding in profit some other farmers who use purebred stock. In every case, however, this is due to careful selection on the part of the scrub stock owner. With the same amount of care and judgment devoted to a purebred herd the profit would have been still greater.

"A scrub herd and very good management will usually produce profitable results when a purebred herd and poor management will produce loss. The figures tend to show conclusively that those who attempt to conduct a dairy business on fair priced land with scrub or dual purpose breeds of cattle are handicapping themselves.

SUPPLEMENT MAIN ENTERPRISE?

"Another problem which is important in practically every farming area of the state pertains to the number of different enterprises which a farm should maintain in order to be most profitable, or the question of diversified farming as compared with the 'one crop' system.

"In an area which has practically one enterprise, such as grain or dairying, does it pay to supplement this one enterprise by others which will require added investment of money for equipment, and many times requires the hiring of extra labor? Many men have demonstrated that they cannot add other enterprises without decreasing the profits of the main one. Others believe it is more profitable over a series of years to have several sources of income on the farm.

"It becomes necessary to obtain accurate figures on this problem in order that definite conclusions can be drawn. The farm survey work which has been initiated by the farm bureaus in the various areas has shown that in practically every area the farm with one or two important sources of income had not the possibilities of good profits that the farms with three or four major enterprises had.

"For instance, in Jewell county in 1915 a survey conducted by the farm bureau showed that the 49 farms which had two or less sources of income had an average labor income of \$277, while the 21 farms with three or more enterprises averaged \$650 labor income. These figures are not guesses, but are the results of actual data taken from the 71 farms in this area.

"This does not mean that it is impossible to make good profits with one or two sources of farm income. There were men in this area who made more than \$1,000 above all farm expenses and interest at 5 per cent on the capital used. To every man with but one or two enterprises who made this amount there were three men with three or more enterprises who did as well."

FARMS TO YOUNG MEN

(Concluded from Page One)

"Few young men inherit money soon enough to buy either land or equipment. They find that it takes too many years of labor as a hired man to save enough to become a tenant. In fact, of the decreasing number of young men who stay on the farms few find it even possible to become tenants. The small number who become tenants find it a long task before sufficient savings can be made to make the first payment on the farm.

"Credit must be provided so that these young men can start to farm and the values of farms must be based on their use for productive purposes and not on an increased price based on an additional speculative value. If the prices of farms were based upon their value for actual farming without the added speculative price, then we should have a condition like this.

WOULD BUILD UP COMMUNITIES

"A credit system suited to the needs of the farmer would enable young men to become tenants instead of remaining as laborers. Then as a tenant, since land would be lower in price due to no added speculative value, it would take a shorter period for him to save enough to make first payment and become an owner. Then again as an encumbered owner, credit suited to the needs of the farmer would

shorten the period required for saving enough to pay off the mortgage.

"The building up of any community or district depends upon the interest and enthusiasm of the people who reside within it. It is unreasonable to expect any one who is coming and going to take either a great or a permanent interest in things which can not be taken with him when he leaves.

"According to a recent soil fertility survey of a number of representative counties in Kansas, just completed by the chemistry department of the Kansas State Agricultural Experiment station, one-third of the original supply of soil fertility of the land has been dissipated in the production of some 30 crops."

POOR COTTONSEED MEAL STILL SELLS IN STATE

Sliding Scale Is Prohibited, but Products Deficient in Protein Are on Market—Analysis Pays Feeder

Cottonseed cake and meal shipped into Kansas in the last year has been of inferior quality—damaged and low in protein, asserts A. E. Langworthy, feeding stuffs inspector, Kansas Agricultural Experiment station.

"The guaranty placed on them by many manufacturers," says Mr. Langworthy, "was the same that had been used in previous years. It gave two sets of figures—a high one used as a talking point in selling the feed, and a low one that was claimed to be all that was meant in case the feed was found to be deficient in protein.

"As soon as inspectors from the feed control office found out what was going on, steps were taken to stop the practice. The question was also taken up by the federal authorities, who made a thorough investigation.

"Use of two sets of figures or sliding scale on labels of goods sold within this state was forbidden as misleading."

The practice of selling cottonseed cake and meal deficient in protein continues, however, even though occasional claims have been adjusted.

H. W. Skinner of Medicine Lodge is a large feeder of cottonseed products and believes in making use of the facilities afforded by the feed control office. He makes a practice of sending samples of cottonseed products he purchases to the office for analysis, having spent for this purpose \$50 in the last year. Basing his action on the results of these analyses, he made claims for rebates on account of deficient proteins or poor quality and received rebates amounting to approximately \$1,000.

Only a small number of persons make any complaint at all, according to Mr. Langworthy, and few take the trouble to put themselves in position to insist on a rebate by having their feed analyzed so that they can prove they did not get what their contract called for.

TAKE NO CHANCES WITH NAIL WOUNDS IN HORSES

Lockjaw or Permanent Lameness May Be Result of Neglect

It is better to be safe than sorry! When a horse steps on a nail take no chances. Remove the nail as soon as possible and thoroughly cleanse the wound. When a horse limps investigate the cause. This is the advice of David Gray, assistant in animal husbandry in the Kansas State Agricultural college.

"The removal of the nail can easily be accomplished with an ordinary claw hammer, a small block of wood being used as a fulcrum over which to pry," says Mr. Gray. "If the nail is not too large a pair of pliers is suitable for this work.

"If not cared for immediately the wound may cause lockjaw or permanent lameness. For cleansing the wound a syringe and warm water may be used if care is taken to cleanse thoroughly. The best method is to apply liberally any coal tar product, such as creolin, as it is effective in breaking up the infection. If a nail wound is given immediate and careful attention the life of a horse is usually safe."

WILL TRAIN FOR ARMY

RESERVE OFFICERS' CORPS TO BE ESTABLISHED IN COLLEGE

Students Who Enlist for Full Course Will Get \$9 a Month and a Chance for Commission in the Regulars

A reserve officers' training corps, which is expected to increase the strength of the agricultural college military force materially, will be established, according to announcement this week by L. O. Matthews, commandant. This is made possible through a recent act of congress.

The cadet corps will be divided into two sections—those who are taking drill as a regular college requirement forming one division and the officers' corps the other. The object of the new corps is to train educated men systematically as reserve officers in the United States army. It will place the men who enlist under the direct orders of the secretary of war. In case of war the men will be called out for duty.

ARTILLERY AND CAVALRY POSSIBLE

Any student may enter the reserve officers' training corps by signing a contract to continue his military training as long as he is in college. Students who enlist and who have completed the equivalent of the two years of military training offered by the college will be given \$9 a month as commutation sustenance.

Upon completion of the college course members of the corps are eligible for commissions in the regular army if they pass an examination. If a sufficiently large number of students enlist in the new corps field artillery and cavalry work will be organized.

ARMY SERGEANTS ARE COMING

Word has been received by Commandant Matthews that seven regular army sergeants will be detailed to the college to act as instructors in military science and drill, including four infantry sergeants, a sergeant for the engineering company, one for the signal corps, and one for the hospital corps which is to be organized.

The organization of college cadets now consists of one infantry regiment, complete, one engineer company, and one signal company with wireless.

MANHATTAN WILL HELP STARVING ARMENIANS

Local Committee Is Formed, with B. K. Baghdigian as Chairman—Saturday and Sunday Relief Days

Next Saturday and Sunday, October 21 and 22, are the days set apart by President Wilson for Armenian and Syrian relief. Governor Capper has issued a proclamation calling on the people of Kansas to aid in this work, and definite steps in this direction are being taken in Manhattan as well as in other towns in the state.

The local committee, composed of representatives of a large number of religious, civic, and social bodies, is under the chairmanship of B. K. Baghdigian, who is an Armenian by birth and who has completed the requirements for graduation from the college. It is planned next Saturday and Sunday to seek contributions for the relief of the Armenians and Syrians now starving in their native countries.

Mr. Baghdigian calls attention to the place occupied by the Armenians in the progress of civilization.

"The Turks conquered Armenia in the fourteenth century," said Mr. Baghdigian. "They did not conquer the Armenian intellect and ideal. For 500 years the Armenians have lived under the most cruel and despotic government the world has ever seen. Whenever the periodic and often the annual and daily massacres spared a few Armenians, they all clustered around their firesides and began to build their homes and give expression to their Christian ideals in thought, art, music, sculpture, and finance until another massacre.

"In spite of the awful horrors of centuries, the Armenians point out with pride to their 1500 years on unin-

terrupted literary history. They are proud of their men of letters, artists, musicians, scientists, sculptors, who are on a par with the best in Europe and America. While their masters—the Turks—furnished the criminals in the Ottoman empire, the Armenians furnished the physicians, the artisans, and the savants. It was an Armenian architect, Sinan, who designed and built the famous mosque of Adrianople and the mosque of Suleyman in Constantinople, and the Armenian architect Balian constructed the palaces of Cheragan, of Beyler-Bey, and of Dolma Bache, 'which might be taken,' writes Theophile Gautier, 'for a Venetian palace—only richer, vaster, and more highly ornamented—transported from the Grand Canal to the banks of the Bosphorus.'

"Even Turkish printing and drama were introduced by the Armenians and two distinguished Armenians, Odian and Servicen, collaborated with Midhat Pasha in framing the Turkish constitution. The Turks would not have a grammar of their own if it had not been for the Armenian philologists."

WHAT TO PUT IN BOY'S OR GIRL'S NOON LUNCH

Variety Is One of Most Important Features, Says Specialist in Home Economics

The capable housewife finds little difficulty in preparing attractive and nutritious meals for her family at home. Many foods, however, do not pack conveniently or are not appetizing when cold. What to prepare for the child's lunch basket is often, therefore, a perplexing question.

"It is essential that the food be nutritious in order to sustain properly the growing active child through the school day," says Miss Mary M. Baird, specialist in home economics in the home study service of the Kansas State Agricultural college. "As poor school work has been traced directly to the lunch box, the question of appropriate lunches for Kansas school children has been deemed worthy of special study and attention.

"The factors to be considered in planning the school lunch are the selection, preparation, and packing of the food, with variety in selection one of the chief things to be considered."

A balanced menu consisting of sandwiches spread with some substantial food such as meat or a meat substitute; fruit or salad; and a dessert, makes an appetizing and wholesome diet, points out Miss Baird. The child likes variety and soon loses his appetite if the same food is placed each day in his lunch box. Little surprises expressive of some mother's thoughtfulness are appealing to the child and he will look forward to the lunch hour as one of the happiest times of the day.

FINISH PRODUCTS HERE IN KANSAS, ADVISES WATERS

President of College Addresses Holstein Breeders of State at Annual Meeting

The annual meeting of the Kansas State Holstein Breeders' association was held at the agricultural college Saturday, October 7.

Dr. Henry J. Waters, president of the Kansas State Agricultural college, pointed out the advisability of finishing products right here in Kansas instead of allowing the raw material to go elsewhere for others to reap the benefit of fancy prices. Doctor Waters spoke in detail of the food value of milk.

A trip over the college farm was followed by a banquet.

THEY STUDY IN PRISON

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furnishes but a small number of the inmates.

Since the Kansas State Agricultural college is one of those educational institutions receiving aid from the land grant made by the national government, work similar to that in the state prison is offered to the convicts in the federal prison at Leavenworth. More than 100 are enrolled.

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TO BETTER FARM HOME

DEAN JARDINE ADVOCATES MEANS FOR PERMANENT AGRICULTURE

More Live Stock Should Be Produced, and Labor Should Be Distributed Throughout the Year, Says President of International Congress

Bringing about conditions tending towards more satisfactory home life, encouraging the production of more live stock, and providing more profitable work the year around for the farmer and his family, especially under dry land conditions, is the program for the International Farm congress, as outlined by its president, W. M. Jardine, dean of agriculture in the Kansas State Agricultural college, in an address before the congress Thursday in El Paso, Tex.

"The chief work of the congress in the past," said Dean Jardine, "has been along the lines of collecting, correlating and disseminating the most up-to-date and reliable facts relating to every phase of dry farm husbandry, while the work of seeking out new facts for farmers operating under a limited rainfall through experimental investigations has of necessity been left in great part to state and federal experiment stations.

RESULTS ARE REMARKABLE

"Most remarkable results have been achieved by them in this field, for today we have as much or more definite and fundamental information relating to farming under the conditions which prevail normally in the trans-Missouri states, as we have on methods of farming under humid conditions. So well has the work of the investigators been done that today farming under semiarid conditions is scarcely less hazardous than is farming under humid conditions.

"The methods discovered by the dry land investigators and popularized as a result of the dry farming propaganda are coming to be recognized as the best and soundest methods to use for insuring successful and profitable productions of crops even in humid areas. While it is absolutely necessary that the dry land farmer follow to the letter the most approved practices if he wishes to produce profitable yields, owing to prevailing drouth conditions, the humid farmer, because of the occasional drouth to be expected, has found that the methods of the dry farmer are the ones that can be counted upon to produce the biggest and surest yields under his conditions. Today we see the principles and teachings of this institution being taken up and used in all agricultural regions in this and other countries as a result of the work of the congress which has led in the movement.

MAKE RURAL CONDITIONS WHOLESOME

"Now that a more or less definite and rather well understood system of farming for dry lands has been developed, through the intelligent and persistent practice of which any farmer may with normal certainty produce profitable crops and thereby obtain a livelihood, the interests of the dry farmer can best be served by this institution if we in the future will devote the major part of our attention to bringing about conditions for a satisfactory home, a permanent rural population, and a satisfactory and wholesome rural life.

"Then we must encourage the growing of more live stock in connection with grain farming by the dry land farmer, in order to provide a market for many of the crops that do best under dry farming conditions, and in order to eliminate prohibitive transportation rates; also to provide profitable employment the year around for the farmer and his family, and to maintain the fertility of the soil.

CHANCE TO PRODUCE BUTTER

"Kansas sold 1,345,900 pounds of butter to New Mexico, Montana, Wyo-

ming, Texas, Utah, Oklahoma, and Mexico in the year ending June 30, 1916. These states are just as well adapted to the keeping of dairy cows and the production of butter as is Kansas. Every one of them ought to be an exporter of butter rather than an importer; they should be selling butter and not so much wheat.

"Since the advent of the silo, it has been shown by a number of experiment stations and leading farmers, that byproducts such as fodder of corn and sorghum crops, may be converted into ensilage and thus made to produce palatable, succulent feed in combination with which animals will also consume anywhere from 10 to 20 pounds of straw daily. A ration composed of these feeds, together with a little alfalfa or some other nitrogenous food, will maintain an animal in good condition at a minimum expense.

"Where live stock is not maintained, millions of tons of straw—perfectly good feed when fed in conjunction with ensilage—is burned every year, or is otherwise wasted. The item of straw alone, if utilized as feed for animals, would produce a handsome return for the dry land farmer. Such a utilization can only be made through the feeding of live stock.

HUNDRED MILLION ACRES AVAILABLE

"There are 100,000,000 acres of agricultural lands in the United States that must be farmed, if at all, by dry farming methods. This land was originally used for the pasturing of live stock, but since the advent of the dry land farmer, the number of live stock produced in this territory has decreased some 21 per cent, according to a recent report of the forestry service of the United States department of agriculture. This report further states that less than 30 per cent of dry land farmers carry live stock on their farms other than the teams they need for cultivating their land and a cow or two to produce milk for the family.

"At the time of the organization of the International Dry Farming congress in Denver, January 24, 1907, under the name, 'Trans-Missouri Dry Farming congress,' the term 'dry farming' was little known and still less understood outside of Utah and southern Idaho where the phrase had its origin. The term 'dry farming' was coined by the Mormons to distinguish farming above the ditch without irrigation, from farming below the ditch with irrigation.

EARLY DAYS OF DRY FARMING

"The man who summer-fallowed his land every other year or once in three years in order to store in his soil two years' rainfall for the production of one crop, was considered to be dry farming. In dry farming the summer fallow served as a means for storing away moisture whereas in irrigation farming the irrigation ditch was used to convey water from streams to his land.

"Providing a plentiful water supply was the all important consideration in either system. Farmers in other western states, eastern Washington and Oregon, in California and to some extent in Wyoming and Colorado, were also practicing summer fallowing long before the organization of the dry farming congress, but had never designated their practice by any specific name.

"While 10 years ago the meaning of the term 'dry farming' was little understood outside of the states named, sufficient information about the new methods had percolated through the central and western states to arouse a semipublic interest in the question. It was this interest animating a few live citizens of Denver and neighborhood that induced the governor of Colorado to invite delegates from the states west of the Missouri river to meet in Denver to consider the advis-

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WHERE TO PUT WELL

LOCATION OF WATER PLANT ON FARM IS IMPORTANT MATTER

Windmill Should Be Placed Somewhere Between House and Stables, but Not Too Near Former—Simple Construction Is Best

The location of well and windmill should be given more consideration by the farmer. They have been set down amid a collection of stables and pens, with little regard for picturesque surroundings or practicality of location. Often, too, but little attention has been given to construction, asserts Dr. J. D. Walters, professor of architecture in the Kansas State Agricultural college.

"Almost every well equipped farm or ranch," said Doctor Walters, "has one or more windmills for the purpose of furnishing the necessary water. The proper location of these mills is somewhere between the stables and the house. Care must be taken, however, that there be no danger of the tower striking the living quarters, should it be blown over by the wind.

ORNAMENT TOWER WITH VINES

"Neither man nor animal should be allowed to obtain water at the foot of the windmill, for if this is permitted the usual objectionable mudhole will result. Provision should be made to run supply pipes to points where the water will be needed the most, such as the kitchen, the stables, the garden, and the lawn.

"The windmill tower should be painted a color to harmonize with the surroundings. Blue grass should be planted at its base, while trumpet vines and other creepers should ornament the uprights.

"The agricultural college is frequently asked by farmers and others which of the many windmills on the market will give the best results for the amount of the investment. This question is as impossible to answer as to state which is the best breed of cattle or horses. It is largely a matter of the requirements in each particular case which type of mill will be most valuable.

GASOLINE PUMP SOMETIMES

"On some farms it is necessary to use a gasoline driven pump, as wind power would prove insufficient. Some mills give good results in shallow wells; others work favorably in deep wells where the water must be raised to a considerable height. Some require constant care while others will run for years without adjustment; some cost an exorbitant price, while others are reasonably inexpensive. All of these points should be taken into consideration and be carefully investigated by the farmer who intends to install a new windmill. No single mill has all the points in its favor.

"The college usually advises the farmer to choose a mill of simple construction. The fewer the parts, the less chance there is for the mechanism to get out of order. Moreover, less friction is caused in operation.

HOW MUCH WATER NEEDED?

"The friction element has considerable to do with the efficiency of the mill. In an average wind velocity of 16 miles an hour, a wheel 10 feet in diameter should produce .12 horse power. This figure, however, is often reduced as much as 50 per cent by unnecessary friction caused by complicated mechanism. If the full capacity of the mill is obtained, .12 horse power will be sufficient for raising 6½ gallons of water a minute to a height of 75 feet.

"For calculating the amount of well water used on the farm in a day it is generally assumed that human beings require about two cubic feet in addition to soft or cistern water, while farm animals require an average of

approximately one cubic foot. For example, a family of five persons, owning six horses, two colts, eight cows, five calves, 25 hogs, and the usual amount of poultry will consume about 65 cubic feet or nearly 500 gallons a day.

"The .12 horse power mill mentioned will pump this water in a little more than an hour and a half, if the wind be just right. From these figures it is not difficult to estimate the quantity of water necessary in any suburban home or on any farm."

AGGIE FIGHTING SPIRIT TO WIN GAME AT K. U.

Teams Are Well Matched, Says Clevenger—Many Alumni Will Return for Home-Coming Event

"It will be a fight from start to finish,"—Clevenger.

Z. G. Clevenger, director of athletics and head Aggie coach, believes that his squad will meet the Jayhawkers at Lawrence next Saturday on equal terms. He is counting on the fighting spirit of the Wildcats to win the game.

Members of the team were somewhat overconfident in the game last Saturday against the Emporia Normals and showed a slump in form in comparison with that displayed in the contest with the Cornhuskers at Lincoln, according to Coach Clevenger. The score of 13 to 3 did not indicate the relative strength of the two teams. The first half was anybody's game.

The band and a force of several hundred students, alumni, and others will represent the agricultural college at Lawrence Saturday. A special train will convey the contingent.

Former students have begun to write in to say that they will be in Manhattan November 11 for the second annual home-coming event. The contest—Missouri vs. Aggies—will be the main attraction. A rousing "pep" meeting is being planned for the night before the game. Well known graduates will speak.

CHARCOAL IS GIVEN AS CORRECTIVE, NOT FOOD

Usually Fed Only to Growing Chicks, Because of High Cost

Charcoal is given to poultry as a corrective, and not as a food, asserts R. M. Sherwood, acting head of the department of poultry husbandry in the Kansas State Agricultural college.

"In case of improper feeding it is well to give charcoal to absorb intestinal gases," said Mr. Sherwood. "It is generally fed to growing chicks only, because of its high cost.

"When there is a supply of cobs on the farm, charcoal can be made from them, and this would be cheap enough to warrant feeding it to hens as well as chicks."

COLLEGE HAS FINE EQUIPMENT FOR TEACHING ENGINEERING

No Institution Has Better, Asserts Well Known New Yorker

No institution in the United States has better equipment for teaching engineering than the Kansas State Agricultural college, according to Calvin W. Rice of New York, secretary of the American Society of Mechanical Engineers, who addressed the students and faculty of the division of engineering, Monday morning.

"The cleanliness of your work shops is something to be commended," said Mr. Rice. "The psychology of cleanliness directly affects workmanship. You have the proper atmosphere to do as high grade of work as is done anywhere in the United States."

The engineering profession has become classed as one of the learned professions, pointed-out the speaker, because of the service rendered to humanity. It is constantly being lifted to a higher plane.

TO PLAN COUNTRY LIFE

COMMISSION IS NAMED BY STATE BOARD OF ADMINISTRATION

Body Selected from Faculties of Institutions Will Give Assistance to Rural Communities of Kansas—Local Men on Board

A country planning commission, probably the first of the sort ever originated by a state educational board, has been appointed by the Kansas board of administration to meet the needs of the rural communities of the state. Announcement of the appointment has just been made by Ed T. Hackney, president of the board.

The commission is so constituted as to cover a wide range of activities. Selected from the faculties of the state institutions, it includes specialists in extension, education, sociology, horticulture, architecture, engineering, and music as applied to rural conditions. A number of agricultural college men are on the board.

WILL MEET STATE NEEDS

The purpose of the board is to make the services of the state institutions available in the most practical way for the benefit of the farmers and other rural citizens of Kansas.

The resolution of the board follows:

"Whereas, the recent awakening in Kansas to the needs for plans to meet the greater permanency with which life in the rural sections of the state is developing, has brought a great demand upon the board of administration and the institutions for assistance.

SPECIALISTS ARE NAMED

"Therefore, be it resolved, that the following specialists in rural problems are appointed a country planning commission to give expert advice and assistance to rural communities: Prof. Walter Burr, director of rural extension service, Kansas State Agricultural college, chairman; Prof. H. M. Culter, rural education, Kansas State Normal school, secretary; Prof. E. B. Matthews, rural sociology, Fort Hays Kansas Normal school; Prof. M. F. Ahearn, horticulture, Kansas State Agricultural college; Prof. W. A. Etherton, rural architecture, Kansas State Agricultural college; Prof. W. S. Gearhart, state highway engineer, Kansas State Agricultural college; Prof. H. E. Malloy, rural school music, Fort Hays Kansas Normal school; Prof. Arthur E. Wesbrook, rural community music, Kansas State Agricultural college."

FARMERS AND JOBBERS PAY FOR POOR POULTRY METHODS

Could Make \$2,000,000 More a Year if They Would Adopt Modern Plans

Kansas farmers and jobbers are paying a high price for carelessness and poor methods in handling and marketing eggs, according to F. E. Fox, assistant in poultry husbandry in the Kansas State Agricultural college.

"The egg business in Kansas amounts to nearly \$30,000,000 annually. On this \$2,000,000 more could be made if farmers would realize the importance of proper methods in handling eggs and poultry," commented Mr. Fox.

"This enormous loss is due to improper nesting and housing, improper feeding, improper care and handling of eggs on the farm, carelessness in hauling and shipping, and carelessness on the part of the merchant in marketing.

"Loss to the producer due to these causes is principally in the quality of the product, for which he receives a lower price. Loss to the consumer is in receiving eggs of poor quality, for which he pays more than they are worth."

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H. J. WATERS, PRESIDENT.....Editor-in-Chief
N. A. CRAWFORD.....Managing Editor
J. D. WALTERS.....Local Editor
ADA RICE, '35, M. S. '12.....Alumni Editor

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WEDNESDAY, OCTOBER 25, 1916

INTELLIGENTLY INTERESTED

Though Kansas ranks twenty-second in population among the states of the union, it ranks eleventh in the number of township crop reporters who furnish agricultural information regularly to the United States department of agriculture. The number of crop reporters in Kansas is 993.

Many of the township reporters have been furnishing data for 15 years, while some have been at work as long as 40 years. The information which they supply occupies an important place in the work of the bureau of crop estimates.

The large number of these reporters in this state shows that the people of Kansas are intelligently interested in farming.

THE COUNTRY PLAN COMMISSION

The board of administration has taken an important step in appointing a country planning commission for Kansas and, moreover, in placing upon it men of recognized ability in the special subjects important to permanent rural life.

For a long time to come, Kansas will be primarily an agricultural, a rural state, and it is of the utmost importance that it develop its agricultural resources and its rural social resources to the best advantage. This will be assured through the cooperation of the citizens of the state and the new commission.

The commission, formed of members of the faculties of state institutions, will, besides, afford an opportunity for the schools to help in public service activities in the most economical and consistent manner. This is a most important feature of the educational work of all properly organized state institutions, and any step which aids in its development to a higher plane of efficiency is a step toward the fulfillment of educational as well as general social ideals.

WHERE FARMING DOES NOT CHANGE

Farming has changed a good deal in the last quarter century, but it has not changed entirely. It has changed by reason of increased knowledge of its scientific side and, to a less extent, of its business side.

The place where farming has not changed is on its human side. Half a century ago the successful farmer worked side by side with his hired hands, giving his advice, keeping track of the details of the work, and taking an interest in his men and their prospects and plans. He watched his live stock personally, seeing that it was properly fed and properly cared for. He took pains to insure that every field was properly cultivated.

Today the successful farmer acts in the same way. He does not try to turn his farm into an imitation of the

Standard Oil company or some other great corporation. He follows business methods, but they are methods adapted to farming, rather than to other lines of business.

It has been noticed by students of economics that in such industries as farming remoteness of the owner from his property and his employees usually resulted in less successful operation of the plant. Slave or serf labor was never highly productive. The farm owned by a city man and managed for him is rarely as profitable as a farm, equivalent in other respects, owned and operated by the farmer living on it. The closer the farm owner can keep to his crops, his stock, his men, the better farmer he will prove to be.

SHORT GRAIN CROP

According to the government forecast of October 1, this year's corn crop is 334,000,000 bushels under last year's crop, but exceeds the crops of the previous 10 years except for 1912 and 1906. Wheat is over 400,000,000 bushels less than last year, oats 310,000,000 bushels less, barley 53,000,000 bushels less, and rye 8,000,000 bushels less. For hay the estimate shows an increase of one million tons.

A comparison of prices shows just as wide a variation, but in the other direction. Last year wheat sold for an average price of 91 cents per bushel on October 1, this year the price is \$1.36; corn sold last year for 70 cents per bushel, this year it was 82 cents; oats were 34 cents last year and now are 44 cents; hay was \$10.69 per ton, but this year is \$10.36; and eggs have increased from 22.3 cents per dozen to 28.1 cents.

CONSERVING PEOPLE'S HEALTH

It is encouraging to note from a report recently made by the census bureau that the death rate is decreasing in this country. In a five-year period between 1901 and 1905 the death rate for the United States was 16.2 per 1000. Statistics show that the rate has gradually decreased. The rate for 1914 was 13.6. Statistics gathered from 25 states and 41 cities with a total population of 67,000,000 show that the death rate for 1915 is 13.5 per 1000.

People are making use of their increasing knowledge to conserve life and prevent disease. They are taking better care of their bodies and making better use of their lives. Yet the number of fatalities from preventable diseases is still too large.

People who live in rural districts should use greater precaution in preventing such diseases as malaria and typhoid. Especially should the source of drinking water be safeguarded; plans taken to prevent flies and mosquitoes, carriers of disease germs.

Better sanitation is needed for schools, churches and other public meetings. Where there are no departments charged with enforcing sanitary laws the people individually must be diligent.—Farm and Ranch.

ROSES FOR THE HOME

Roses may be divided into classes according to the purposes for which they are used, as for lawns and borders, for arbors or trellises, for cut flowers, and for other ornamental purposes.

Native species and those least modified by man's crossing and selection are most suitable for lawn and border planting.

Climbing roses used for arbors and trellises may be handled either to give an abundance of bloom or to produce shade, but they can not do both satisfactorily, and they are not as well adapted to the production of shade as many other plants.

The essentials for successful growth are a well drained retentive soil thoroughly enriched, preferably with rotted manure. Cut flower roses especially need heavy annual manuring.

Special care must be exercised to prevent the roots from drying when

out of the ground for transplanting.

Own rooted plants are best for the average grower.

Border roses should have little pruning, the removal of the dead wood and the cutting of the whole bush to the ground every 5 to 8 years being best for most varieties.

Climbing roses should be pruned just after blooming by having the wood of the previous year's growth removed.

Cut flower roses should be cut each spring to within 6 inches or 1 foot of the ground for finest blooms, or one-third to one-half the wood should be left for the greatest quantity of bloom.

Watchfulness is the price of success with roses, especially with the climbing and the cut flower varieties.—F. L. Mulford, United States Department of Agriculture.

"go to it." The trouble with most unsuccessful men everywhere is that they have not acquired the habit of work, close application to whatever they may have in hand.—Hoard's Dairyman.

SIXTEEN-HOUR DAY

I used to think I never had any time to go to grange, as it took all Saturday afternoon, and there was so much to do on the farm. I never had time to go to the county fair, farmers' institutes, evening gatherings in the neighborhood, or my lodge meetings.

For two years after I bought my farm I put in on an average of 16 out of the 24 hours at work. In winter I worked in the woods drawing logs, and did my chores with a lantern at both ends of the day.

The gray hairs got good and plenty in my hair, and I commenced to age fast. One day I read an article that

Boys and Girls and Reading

The Saturday Evening Post

THERE are plenty of bad books for boys and girls; yet they hardly constitute the real problem in connection with juvenile reading. These books are bad because they are useless rubbish, mere husks without nutriment. They are bad because they stunt a youthful reader's taste and drug his imagination. They are of the dime-novel sort—sometimes modernized and most respectably bound in cloth.

But they hardly constitute the real problem—that is, the boy or girl who does not even read trash. We would rather a boy read dime novels than read nothing. The veriest rubbish may supply a foundation for something better. It may help to the formation of one of the most precious habits any person can form—the habit of relying on books as a means of passing a certain portion of every average day.

A reading habit is about two-thirds of education. We have never known a person who read much that read much trash. Invariably, by our observation, the person who reads not is one who reads little. If we could have a guaranty that a boy was going to spend a couple of hours a day, as a customary thing, reading books, we should feel sure of his getting round to real books in due time.

The Boy Scouts of America have done a good work in attacking bad juvenile books and suggesting good ones. We do not minimize the importance of throwing out the bad book and putting a good one in its place. But merely seeing that a boy or girl does not read bad books is no discharge of a parent's obligation. That may mean simply that they read no books at all.

INTEREST IN ONE'S BUSINESS

After recounting the experience of an Iowa boy who joined a baby beef club and who said that until that time he had never taken any interest in his father's farm, but now everything looked different, Wallace's Farmer observes:

"Successful business and professional men invariably say that one of the steps which helped lead to their success is that they liked their work to begin with, and their advice is for one not to choose a life's occupation unless that work means something more than the dollars it will return. A great many failures can be traced directly to a lack of interest in one's business, farmers as well as lawyers, physicians, or ministers, being included. A man who takes no interest in a farm or in live stock, had better seek another occupation. The most successful farmers are those whose personal interests are centered on the farm."

Sheer laziness—a dislike for physical action—is often at the bottom and is the cause of failure on the farm. We have our share of men among farmers who are constantly looking for a "soft snap"—some way of making money besides vigorously attending to their own farm business. After all, the "diligent man" must be diligent in spirit before he can be diligent with his hands or his brain.

It is the "willing worker" who gets the persimmons. The Iowa boy above referred to was surprised at the change in his own spirit that came after his ambition was aroused by his father giving him a calf and telling him to

said there was something wrong with the man who couldn't take a day off once a week from his farm work to go to town, attend his farmers' meetings, or fix up the flower beds for his wife.

It went on to say that such a man never uses his head to help his hands. I got to thinking, "Was I one of those poor fellows?" and the more I thought of it the surer I was of my mistake.

I began going to grange every Saturday afternoon. I met my brother farmers, asked questions about their crops—when they sowed and planted—and learned a lot. Sundays I read my farm papers that I had always taken but could find no time to read, walked over my farm or to one of my neighbors, and planned my work for the coming week. I got a little book and noted in it the little things to do on stormy days in the workshop.

My boys began to be some help to me, and when the work got on my nerves, so to speak, and the boys got tired of plowing, dragging, cultivating, and hoeing, we would drop everything, drive eight miles to a trout stream, fish all day, and get just as tired as we would on the farm. But, oh, the change! It did us so much good. We could buckle into it the next day, and the work just melted out of sight.

Since I right-about-faced I am doing half our work now with my head, and my work is better kept up, my crops go into the ground on time, and I don't feel so tired and worn out. We quit work in time to have the teams taken care of and be ready for our meals at meal time. We all like it better, including the wife.—George M. Weaver in Farm and Fireside.

THE OLD ROUND

Lee Wilson Dodd in the New York Tribune

So much of sun, so much of rain, and now
My apples redden and my pumpkins swell;

Then less of sun and more of rain,
the nights
Lengthen and chill the earth: black frost, white snow,
Winter—then demi-winter, miscalled spring:

A crocus seen by some one; next, a bluebird;
And the old round begins again—so much

Of sun, of rain—June roses, early peas,
The old, old story . . . And may God, who tries

Each year the same experiment and never
Fails in his demonstration, may He grant me

The full span—for I love His chemistry
Of sun, wind, rain, nor long for novel lore.

SUNFLOWERS

Football is a game that requires a stiff backbone, a stiff arm, and a stiffer upper lip.

A good many girls that look down into wells to see the faces of their future husbands on Hallowe'en could save themselves a lot of trouble by jumping.

A prominent cartoonist has drawn a series of pictures to demonstrate that an absent-minded man should not get married. It has always been our impression that most married men prefer to be absent-minded.

HOW TWO CAN LIVE ON \$100 A MONTH

IN OCTOBER	
Rent.....	\$25.00
Groceries.....	31.87
Shoes (2 pair).....	16.00
Suit (man).....	12.98
Coat (wife).....	37.50
Hat (wife).....	15.00
Gas and electricity..	8.22
Coal (for winter) ..	56.00
Payment on Victrola	10.00
Payment on gas	
range.....	3.00
Car fare.....	4.00
Movies.....	10.00
Church.....	.40
Tobacco.....	.45

Total.....\$230.42
Salary.....\$100.00
Note.....150.00

Total.....\$250.00
Balance.....\$19.58

A QUARTER CENTURY AGO

Items from The Industrialist of October 24, 1891

Genung's rhetoric has been substituted for Hill's, as a textbook.

The Rev. O. M. Bowman of Blue Rapids led the chapel exercises Thursday morning.

The students, almost en masse, attended the political address by Senator Peffer yesterday afternoon.

Professor Popenoe, although unable from pressure of college duties to attend the meeting of the Academy of Science last week, was chosen its president.

The political epidemic struck the Alpha Beta and Ionia societies yesterday, they holding no sessions on account of the anticipated debate between United States Senator Peffer and State Senator Burton.

Regents, faculty, and faculty wives met with Mrs. Kedzie in the sewing room on Tuesday evening to partake of "breakfast" prepared and served by the cooking class. Misses Short, Dow, and Conwell, post graduates, presided at the tables. The tender beefsteak, the delicious waffles, done to a turn and sweetened with California honey, and, above all, the excellent service, elicited many compliments from both pupils and teacher.

Sam Kimble, '73, is stamping the district for the Democracy.

Thomas Bassler, '85, writes from Westgate, Geary county, of a prosperous school and improving health.

AMONG THE ALUMNI

Mr. and Mrs. O. E. Graper, '14, of Eldorado spent last week visiting relatives in Manhattan.

Miss Winifred Mae Johnson, '05, is attending a deaconess training school in Chicago this year.

Miss Elizabeth Burnham, '16, is teaching domestic science in the high school at Blue Rapids.

Edward Shim, '16, is teaching agriculture in the Lahainaluna school, Sahaina, Maui, Hawaii.

Miss Pearl McHenry, '15, is teaching English and domestic art in the high school at Minnewaukin, N. D.

Miss Mary E. Glenn, '15, is teaching domestic science and art in the new township high school at Louisville.

G. H. Sechrist, '16, is in the manual switchboard engineering department of the Automatic Electric company, Chicago.

Miss Lulu Case, '11, was a visitor at college on her way to Berkeley, Cal., where she will enter the University of California.

Miss Grace Currie, '16, won the first prize of \$5 in the horseback riding contest at the fair held at the Strong schoolhouse.

Richard Meyer, '05, of Riley, is in politics this fall. He is Democratic candidate for the office of county clerk of Riley county.

Miss Julia Baker, '15, writes to college friends of pleasant work in her second year in the Lewiston (Montana) high school.

John Frost, '92, spent a part of last week in Manhattan, called here by the serious injury of his son, Clyde, a freshman in college.

Miss Lillian Weeks, '14, visited college friends Saturday. She is teaching domestic science and art in the high school at Clifton.

Mr. Edwin McDonald, '12, and Mrs. Frances (Case) McDonald, '12, have gone to Berkeley, Cal., where Mr. McDonald is in the employ of the city.

S. E. Houk, '11, is veterinarian in charge of the Continental serum laboratories at Muscatine, Iowa. He moved there recently from East St. Louis, Ill.

Mrs. Florence (Sweet) Evans, '07, with her son Earl Edward, is visiting at the home of her parents in Manhattan. Mr. and Mrs. Evans are moving to Fort Smith, Ark.

M. E. Hartzler, '14, is visiting friends in town and at the college. He is at present instrument man on one of the valuation parties of the interstate commerce commission.

The civil engineering department is in receipt of a recent letter from M. G. Martling, a former student, who is working in the designing department of the Terminal company, Kansas City.

H. F. Tagge, '13, is teaching agriculture in the schools of Iloolee, Ariz. A letter from Mrs. Elsie (Adams) Tagge, '12, tells of an enjoyable 120 mile trip through Arizona's mountain scenery.

Miss Emma Doll, '98, is again enrolled as a student in college. She is taking special work in domestic science. Her brother, Dr. George Doll, '97, is practicing osteopathy in his home town, Larned.

Miss Fern Faubion, '16, is teaching at Chokea, Minn. At the fall fair in Chokea, Miss Faubion won six prizes on her exhibits; four firsts on bread, cake, crocheting, and sewing, and two seconds on embroidery.

J. Clarence Jones, '13, writes the department of civil engineering that there are many openings for civil engineers in and about Chicago. He is at present working for the Chicago and Northwestern railroad.

Miss Grace Willets, '15, has charge of the new high school lunch room at East St. Louis, Ill. Miss Willets has charge of the ordering and equipping

as well as the management of the lunch room, which seats 350 persons.

W. G. James, '13, has resigned his position as instructor in the University of Maine to become assistant professor of electrical engineering in the Agricultural and Mechanical College of Texas, College Station, Tex.

Miss Wilma Evans, '09, is beginning her second year as teacher of domestic science in the Colfax county high school in Raton, N. M. During the past summer she did special work for the United States department of agriculture.

Mr. E. H. Smies, '13, and Mrs. Winifred (Alexander) Smies, '10, will be in Kansas next month on their way south. Mr. Smies is in the United States bureau of soils, and makes surveys in various parts of the country, being now at work in Clay county, Iowa.

A. P. Davidson, '14, has charge of the work in agriculture in the school of agriculture at Curtis, Nebr. This school is connected with the University of Nebraska. Mr. Davidson is taking an active part in a movement for a stock judging contest for students in secondary schools at the stock show at Denver.

MARRIAGES

KEATS-WECKMAN

Miss Lucile Keats, '11, and Mr. Lanus Emmette Weckman were married on Wednesday, October 18, at the home of the bride in Topeka. Mr. Weckman was a student in college from 1910 to 1912. Mr. and Mrs. Weckman will reside at Plattsburg, Mo.

BIRTHS

Born, to Mr. E. H. Smies, '13, and Mrs. Winifred (Alexander) Smies, '10, Spencer, Iowa, on October 11, a son.

Born, to Mr. Fay H. Allis and Mrs. Myrtle (Oskins) Allis, '09, Omaha, Nebr., on August 2, a daughter, Helen Elizabeth.

IN NORMAL SCHOOL WORK

To the Alumni Editor of THE INDUSTRIALIST:

Please have my Industrialist sent to the address given below instead of to Asherville, N. C. This fall I accepted a position in the State Normal school at this place as head of the domestic science department, with a very substantial increase in salary. The work is proving very interesting and enjoyable.

THE INDUSTRIALIST is one of my weekly delights.

Very truly yours,
ETHEL McDONALD, '07.
River Falls, Wis.

CHEMISTRY SEMINAR TAKES STUDENTS AND PROFESSORS

All Join in Discussing Applications of Their Chosen Science

Much interest is being shown in the chemistry seminar which has been revived. P. J. Newman, assistant professor of chemistry, is chairman. Formerly membership was made up of the chemistry faculty, but the bars have been let down and a number of students are availing themselves of the opportunity of broadening their knowledge of chemistry as applied in the industries.

Meetings are held every Monday afternoon at the eighth hour in room 26, Denison hall, and one college credit is given for the work of the term. Any person in the college who has had sufficient chemistry to make it possible for him to read with intelligence the chemical journals used in the course, is eligible for membership.

The object of the seminar is to familiarize the members with the present day uses of chemistry in agriculture and the manufacturing industries. Current chemical and industrial journals are reviewed and the programs consist of reports and discussions of the articles read. Students are allowed much freedom in choice of reading, although it must be done under the direction of members of the chemistry department to whom students are assigned.

TO FEED YOUNG CALF

SPECIAL CARE SHOULD BE TAKEN, SAYS DAIRY PROFESSOR

Temperature and Sweetness of the Milk Are of Particular Importance—Corn Meal Gives Best Results as Supplement—Keep Hay in Reach

If the young calf must be taken early from its mother, take it at birth, as teaching it to drink from the pail will then be made easier, according to J. B. Fitch, associate professor of dairy husbandry in the Kansas State Agricultural college.

"The calf should by all means have the whole milk for at least the first week," said Professor Fitch. "The milk may be fed in two feeds—night and morning—but better results are obtained by feeding three times a day.

WHEN TO GIVE SKIM MILK

"The time to change the calf from whole milk to skim milk depends upon the development of the calf. If it is healthy it may be changed to skim milk at the end of the second week, but the third week would be better. This change must be made gradually by putting a small quantity of skim milk into each feeding. About a week or 10 days is required. In this way the calf learns to like the skim milk without noticing the change.

"The right temperature for the milk is 100 degrees. It should be fed at as nearly this temperature as possible. Feeding cold milk at one meal and warm milk at another upsets the digestive system of the young calf.

KEEP PAILS THOROUGHLY CLEAN

"It is also important to feed the milk sweet. A single feed of sour milk might cause serious trouble for the young calf. Better let it miss a feed or even two than give it sour milk. The pails out of which it is fed must be kept clean and sterile.

"If one has an abundance of skim milk it is well to feed the calf six or eight months. When the calf is changed from whole milk to skim milk, it will begin to eat grain. Place a little grain in its mouth after each feeding of milk. It will soon learn to eat the grain without assistance. The grain should not be fed with the milk. The calf should be allowed to masticate the grain.

START WITH HALF POUND

"Half a pound of grain a day is usually sufficient for the first two months. From this time until the calf is six months old a pound a day will be enough. Corn meal has given the best results to supplement skim milk. "Clean, bright hay within reach will encourage the calf to consume a small amount of it. Plenty of fresh water should also be provided for the calf at all times."

CEMENT POSTS ARE GOOD FOR LINE FENCES ONLY

Material Lacks Elasticity—When Wood Is to Be Used, Treat It With Creosote

Cement posts are unsatisfactory for anything except line fences at the Kansas State Agricultural college, according to R. E. Wiseman, assistant in farm machinery.

"Cement posts of average size, reinforced with three-inch iron rods, were used in the college dairy lot fencing, but were too easily broken," said Mr. Wiseman. "When the cattle 'bunch' and put a heavy strain on the wire and post, the result is a cracked post, as there is no elasticity in the cement. The college is going back to the use of wood posts for lot purposes for that reason.

"For line fences, there is no reason why the cement posts should not be used more generally. Around pasture and fields, it is only occasionally that a post would be cracked.

"When a line fence post is cracked and bent over, the rods in the post will allow it to be bent back into position. The broken place may be refilled with cement, and the post is then practically as good as new.

"The cost of these posts is of course somewhat more than the wood posts, but because of their lasting qualities they are cheaper in the end.

"Of the wood posts, the hedge is of course recognized as the best for durability. However, other woods may be treated so they will last just as long.

"The best preparation of this kind is to treat the portion of the post which is in the ground with creosote. This prevents moisture from rotting the posts and is not favorable for the growth of fungus. Hedge posts, too, treated with this chemical will last many years longer.

"If strong posts are used in the line fence, they may be set two rods apart, although a rod apart will make a safer fencing with less repair."

Farmers are advised by Mr. Wiseman to use a 30-inch woven wire and two barbed wires around grain and forage fields.

SCHOOLHOUSE FAIR FOR EVERY KANSAS COUNTY

Dean Edward C. Johnson Sets Up Educational Ideal—Would Exhibit Farm and Home Products

Every county should have its schoolhouse fairs and every school an annual exhibit of farm, school, and home products, in the opinion of E. C. Johnson, dean of extension in the Kansas State Agricultural college.

"Kansas counties have already made a splendid beginning with school fairs," said Dean Johnson. "In one county this year 62 out of 65 schools made exhibits at the county school fair and in another county last year every school in the county was represented by an exhibit, its teacher, and members of the school board.

"These fairs are not mere exhibits of crops, live stock, and school and home work, but a combination of all of these with many additional features. They are educational first of all and help even in the teaching of the three R's in a much less formal way than usual.

"It is better to have standard varieties of corn rather than exhibits of unusual varieties that should not be grown in the community; better to have a good draft horse than a racer which is of little practical use; better to have an exhibit of darned stockings than embroidery—although embroidery should not be overlooked; and better to have good bread than fancy cake.

"In addition to their educational value these fairs promote neighborliness and community pride and instill a spirit of cooperation in children and parents."

AGRICULTURAL FAIRS GROW IN IMPORTANCE IN KANSAS

College Furnishes Judges for 63 in September and Early October

The agricultural fair is becoming an important annual event in many Kansas towns. That these fairs are for the farmers rather than the fakirs is evidenced by the increasing number of requests for competent judges received by the extension division of the Kansas State Agricultural college.

This fall the agricultural college, through the divisions of college extension and agriculture, furnished judges for 63 fairs and festivals, many of which required three persons to complete the work and place the awards. In all 173 days were spent by college people in judging at fairs in September and the early part of October.

The departments of farm products and live stock were popular attractions. At every fair domestic science and art also made a good showing.

AHEARN MAKES PLANS FOR COOPER COLLEGE CAMPUS

Sterling Institution Will Extend Grounds and Erect New Buildings

Plans and specifications are being prepared under the direction of M. F. Ahearn, professor of landscape gardening in the Kansas State Agricultural college, for laying out the campus for the proposed rebuilding and extension of Cooper college at Sterling. A. M. Doerner, assistant in landscape gardening, is drawing the plans.

Cooper college has recently purchased 80 acres of land adjoining the present site of the college, a part of which will be used in the course in agriculture, recently added to the college curriculum.

The plan as being worked out by Professor Ahearn provides for the erection of 11 new buildings. The development of the plan is to cover a period of 50 years. The location of the buildings, the walks and driveways, the shrubbery groups, and every tree appear on the blue print now just as they will appear in reality on the campus at Cooper 50 years hence.

Professor Ahearn and his assistants are busy with other landscape plans for city and farm homes, school grounds, and parks in various parts of the state. The department is now better equipped for rendering this class of service to the people of Kansas than at any previous time.

OVERCROWDING HENS OFTEN PRODUCES COLD AND ROUP

Plenty of Room in Quarters Will Result in More and Better Eggs

Overcrowding in the hen house is one of the direct causes of colds and roup, according to Ross M. Sherwood, specialist in poultry husbandry in the Kansas State Agricultural college.

"Egg production is lowered as a result of disease and uncomfortable conditions induced by overcrowding," said Mr. Sherwood. "Every fowl in the hen house should have nine inches of lineal space on the roosts, and three or four square feet of floor space. If such housing is not provided, the hens will not have room for scratching. Hens should be fed in loose straw so that they will be forced to exercise in order to get feed.

"Colds are caused by lack of ventilation and in a crowded building ventilation is often impossible because in obtaining air circulation drafts will be created. Roup often develops as the result of a cold.

"When chickens are confined throughout the year they require more space in summer than in winter. Where hens are not confined continuously, they seek relief from overcrowded conditions by wandering away from the flock and finding shelter in poorly constructed out-buildings or in trees.

"It has been found that the fertility of eggs laid by hens kept in close confinement is lessened. This is due to the fact that a weakened condition in the hen gives rise to a weak germ in the egg."

REDUCE CREDIT SYSTEM AND CUT KANSAS RETAIL PRICES

Merchant Now Must Pay Interest to Wholesalers on His Accounts

Kansas farmers who desire to reduce the "cost of purchase" should pay cash for commodities rather than continue an expensive credit system, according to Theodore Macklin, instructor in rural economics in the Kansas State Agricultural college.

"As conditions are at present," said Mr. Macklin, "nearly every merchant does more or less credit business and one merchant does not have an advantage over another in regard to the prices fixed for commodities. Should a merchant do a strictly cash business, however, and still retain his trade he would be able at the regular competitive prices to build up a surplus for rebate to his patrons and thus draw trade.

"Under the present system of extensive credit a merchant is compelled to carry as large a stock of goods on his books as he does on his shelves. Wholesalers are not so liberal with their credit as are retailers and every charge account means so much discount lost or so much interest for the merchant to pay.

"Farmers should pay cash for commodities if it does not inconvenience them to any great extent. If they are deserving of credit—and the merchant can usually tell—it should be given but with certain limitations as to time. Credit up to 30 days should be given. Beyond that the farmer should be willing to pay interest on his accounts."

BEST FEED FOR LAMBS

COMBINATION RATION PRODUCES CHEAPEST GAINS, SAYS SPECIALIST

Corn or kafir, with Silage and Alfalfa, Produces Good Results—Quarter Pound Increase a Day Is Good Showing

Lambs make cheaper gains when fed corn or kafir, with silage and alfalfa than on corn and alfalfa alone, according to A. M. Paterson, assistant in animal husbandry in the Kansas State Agricultural college.

"Three rations are desirable for feeding lambs. First, corn, alfalfa, silage, and cottonseed meal; second, kafir, alfalfa, silage, and cottonseed meal; and third, corn or kafir, alfalfa, and cottonseed meal. Lambs fed corn, alfalfa, and cottonseed meal will make slightly greater but not quite so cheap gains as those fed kafir, silage, alfalfa, and cottonseed meal. Whole grain should be fed to lambs because it will not gum as readily as ground grain.

INCREASE THE GRAIN GRADUALLY

"A tenth of a pound of grain a day is plenty to feed at first but this should be increased gradually. Within two or three weeks, when the lambs are on full feed, two or three pounds of grain should be fed.

"Never crowd or push the lambs, because if they once get off feed, they lose rapidly in flesh. Always feed plenty of alfalfa, or some other kind of hay along with silage. A quarter of a pound of cottonseed meal a day is enough. Remember that cheap feed such as damaged hay may be fed lambs. From 60 to 80 days is the length of the feeding period.

"The most desirable weight for finished lambs is between 80 and 85 pounds. A quarter of a pound gain a day is a creditable showing for lambs on full feed.

WHAT MAKES GOOD FEEDER?

"Feeder lambs should weigh between 50 and 55 pounds. They should have a strong frame, be rugged, show lots of constitution, and be uniform in size and conformation. They should have size and substance enough to carry plenty of flesh and fat. Lambs of this kind can be obtained through any reliable commission firm.

"Feeding pens must be well drained, so that they will remain dry. Nothing is more detrimental to the health and thrift of lambs than wet quarters. A shed with a good roof, and closed on the north and the west, is desirable. This will protect the lambs from winds and snows. The feed bunks should be conveniently placed, and clear, fresh water should be accessible at all times."

CEMENT FOUNDATIONS WILL KEEP RATS OUT

Trapping Is Useful Method of Getting Rid of Rodents—Terriers Also Kill Many

Exclusion from buildings is the first important measure in the destruction of rats, as recommended by Dr. L. R. Dice, instructor in zoölogy in the Kansas State Agricultural college.

"The use of cement in the construction of all foundations is the best means of excluding rats from buildings," said Doctor Dice. "Cellar floors and walls should be of concrete, and in wooden buildings the space between the sheathing and lath should be filled with concrete to the height of a foot. Buildings without cellars should have concrete floors or if wooden floors are necessary they should rest upon concrete.

"In a rat-proof building of this sort entrance is possible only through doors or windows. Basement windows should be screened with wire netting and doors reinforced with light metal plates to prevent the rodents from gnawing through."

Trapping and poisoning are good methods of getting rid of rats but the latter is often impracticable on account of the odor from the dead animals, believes Doctor Dice. Trapping is most effective when food is not easily

accessible. The improved modern traps are useful if they are strong enough. Metal traps are best because they are less likely to absorb odors and are durable. Cages often catch a large number at once but a constant and intelligent use of the trigger type gives greater results in the end.

The use of cats is a method of extermination preferred by some persons, but, according to Doctor Dice, terriers are better hunters.

KANSAS AGAIN TAKES FIRST FOR EXHIBIT

Material Prepared by College Wins Top Place at El Paso—Alumnus Gets Corn Sweepstakes

For the second successive time Kansas won the first prize for its exhibit at the International Farm congress. Word has been received from El Paso, where the congress is being held this year, that the state pulled down the top prize of \$100 in cash and a silver loving cup valued at \$500. The Kansas exhibit won similar prizes last year at the congress at Denver.

The exhibit was prepared by the agronomy department of the agricultural college, which was delegated by the state to perform this duty. It consisted of farm products, especially grains and forage crops. It won the prize in competition with exhibits from 15 other states.

P. H. Lambert of Hiawatha, graduated from the college in 1913, won first prize and sweepstakes on corn in the exhibits at the congress.

WOMEN KEEP RECORDS OF SALES ON KANSAS FARMS

Well Kept Books Will Soon Be Essential to Successful Agriculture

That women in Kansas farm homes usually keep records of poultry, egg, cream, and butter sales, was brought out through the farm management work conducted by the division of extension in the Kansas State Agricultural college in cooperation with farm bureaus. Some sort of record is also kept by many farmers.

"As farm business becomes more complex, more farmers feel the need of keeping records of their operations," commented Edward C. Johnson, dean of the division of extension. "It will not be many years before it will be just as necessary and just as common to find well kept books on the farm as in the average business house in town."

CARBON TETRACHLORIDE IS BEST FOR REMOVING GREASE

Iron Rust and Ink May Be Taken Out with Acid Solutions

Grease spots may be removed by the application of carbon tetrachloride, according to H. F. Zoller, assistant in chemistry in the Kansas State Agricultural college.

"Removing grease spots with gasoline or benzine is both dangerous and wasteful," said Mr. Zoller. "Chloroform is effective, but is dangerous. Carbon tetrachloride is used by cleaners because of its safety, cleaning power, and the absence of a disagreeable odor. The disadvantage is its expense.

"Ink is difficult to remove if it has been in the garment for some time. Iron inks may be removed by oxalic, acetic, citric, or dilute hydrochloric acid. In case of the coal tar inks, the spot must be bleached.

"Iron rust can be removed by a fairly strong oxalic acid solution, if allowed to stand on the goods for a short time. Often when it is exposed to the sunlight, the action is a little quicker. The excess of oxalic acid must be washed out, and the goods washed with a good soap in order to neutralize the acid. Hydrochloric acid is the best remover of iron rust, if handled by an experienced person.

"An excellent formula for the removal of fountain pen ink, especially iron ink and iron rust, is the aceto-oxalic acid formula. It is made by saturating a 10 per cent acetic acid solution with oxalic acid and mixing one part of the product with four parts of alcohol."

WHAT MAKES A FARMER?

SPECIAL QUALIFICATIONS ARE REQUIRED FOR SUCCESS

Tilling the Soil Under Modern Conditions Is Business Undertaking, Made Such by Large Acreages, Improved Machinery, and Other Factors

"To presume that a man can be a successful farmer, regardless of previous experience or qualifications, is as logical as to say that a man can be a successful lawyer without any legal training, or a successful doctor without any knowledge of medicine," asserts W. E. Grimes, assistant professor of farm management at the Kansas State Agricultural college.

"Farming requires special training the same as any other vocation," said Mr. Grimes. "This does not mean that failure is certain to befall the inexperienced; that to be a success a farmer must have a college degree, or be an expert accountant. He must, however, be a good business manager.

OVERCOMES NATURAL FACTORS

"The reason is plain. The introduction of improved machinery necessitates an outlay of capital. This machinery is indispensable, but it is expensive. To justify the expense the farmer must have sufficient acreage. It takes practically as large an equipment to farm 40 acres as it does to farm 60. This makes farming a business undertaking, which requires business ability to a high degree.

"Farming as an occupation has been regarded merely as the process of scattering seeds and waiting for the rain, this process being attended by success or failure in proportion as the land was fertile or the rainfall abundant. These are factors, it is true, but they are factors which can be overcome to a certain extent. The more successful farmers are overcoming them.

WARNING TO CITY MEN

"Their success, furthermore, is not the result of stupid patience or a generous providence; it is not measured by rainfall or high market prices, but nine times out of 10 can be attributed to good, businesslike management.

"There are prospective farmers today—noticeably in the big cities—who would like to try their hand at farming. The slogan 'back to the land' has been shouted at them so persistently, that they have become thoroughly disgusted with a life that is bounded by gas bills and check blanks. Yet if their only equipment is a hoe and a muscled arm they had better stay with their garden patch. They might qualify as successful gardeners, but it is doubtful if they would ever make good farmers."

TO BETTER FARM HOME

(Concluded from Page One)

ability of organizing a congress that should represent the interests of the farmers and new settlers of the great western plains and mountain valleys.

FIRST PURPOSE OF CONGRESS

"Exact information regarding how to proceed with any degree of certainty to produce profitable crops by dry land methods was very fragmentary prior to a decade ago, and the primary object for which the congress was established was to make it a central organization representing the common interests of farmers operating under limited rainfall—an organization which would devote its resources to the assembling, disseminating, and popularizing of the most up-to-date and reliable information on dry farming methods, and which with its annual sessions should act as a clearing house for the exchange of ideas and comparisons of results among the leading farmers of the territory interested and scientific and business men. Here the results of experiment station investigations having a bearing upon dry land farming should be called to public attention and made available for the use of every dry land farmer.

"Later, the institution took on an additional enterprise—the exhibition of farm products produced under dry farming methods—which, as you will

observe, has developed into the largest exposition upon the continent devoted exclusively to the products of the soil. Today the agricultural exposition forms a leading feature of the congress and one of invaluable educational possibilities.

GREAT PROGRESS IN DECADE

"Wonderful progress has been made in the development of the great western plains and mountain valleys during the last 10 years through the accumulation and dissemination by the congress and other agencies of reliable information on dry farming. The congress has wielded the greatest and most far-reaching influence in calling the attention of all civilized nations to just what dry farming means and under what conditions the principles advocated by the institution may be put into effective practice—also through supplying to prospective settlers information on the relative advantages of the various areas open to settlement.

"At each session of the congress delegates have been present not only from the central and western states of this country, but from provinces of Canada, from Mexico, and from many other nations, indicating the widespread interest in the system of farming advanced by the institution. Again this year as a year ago—even in these troubled times—you will observe many representatives of other countries present. The reports of our past annual sessions have been published in many languages and circulated in many countries of the world. Books on dry farming have been prepared and published by authors in this field in this country and abroad, and today the term 'dry farming' is widely known and well understood, and accepted as standard. Through its sessions, the circulation of its annual report and the official organ, the Agricultural Review, through the messages carried away by the delegates each year, and through its wide correspondence, the congress has contributed largely to the development of a successful system of farm husbandry for dry lands."

BLEACHING POWDER TO KILL ODOR IN WATER

Microorganisms Are What Cause Disagreeable Smell, Points Out Chemistry Professor

If the cistern water has a disagreeable odor it can be made sweet and usable by treating with bleaching powder, according to P. J. Newman, assistant professor of chemistry in the Kansas State Agricultural college.

"The rain water as it comes from the roof is laden with microorganisms, which under the right temperature conditions, grow and multiply," said Professor Newman. "When summer rains are allowed to run into the cistern this ideal temperature is soon reached and the development of these organisms proceeds rapidly. The unpleasant odor is due mainly to the life processes and decay of the bacteria."

Bleaching powder, or calcium hypochlorite, can be purchased in any drug store at from 20 to 30 cents a pound. One-third to one-fourth of a pound is sufficient to treat 50 to 100 barrels of water.

The powder as it comes from the store, is placed in a pail or any convenient receptacle which is then filled with water. The mixture is stirred for a few minutes until no more of the powder will dissolve, and is allowed to settle. The mixture is then poured into the cistern.

Some of the powder will remain undissolved in the bottom of the pail. Pour in more water and repeat the process as many times as may be necessary to dissolve all the powder. Where possible it is preferable to agitate the water in the cistern while the bleaching mixture is being poured in. When used in the proportion indicated the powder is not in sufficient quantity to make the water unfit for use, nor is it dangerous in any way. It acts simply as a deodorizer and a germicide.

DEHORN FEEDER CATTLE

PRACTICE RESULTS IN GREATER CONVENIENCE AND ECONOMY

Horns Should Not Be Removed From Animals Being Fitted for Baby Beef, as Buyer May Get Suspicious and Cut Price

Dehorning is a good plan with stocker and feeder cattle or calves to be kept for feeders, according to L. B. Mann, fellow in animal husbandry in the Kansas State Agricultural college.

"The chief advantages of dehorning," says Mr. Mann, "are convenience and economy in the feed lot and in shipping, and possibly a slight increase in market value.

"Animals being fitted for baby beef should not be dehorned, as with horned breeds the age can be told approximately by the size of the horn, and when the horns are removed the buyer may suspect an animal of being over the age limit and may cut down somewhat on the price.

MAY DEHORN CALVES EARLY

"If the feeder is raising his own calves, the best method of dehorning will be found to be an application of caustic soda or caustic potash when the calf is a few days old, or when the button can be felt through the skin. Wet the stick of caustic slightly and rub it well on the skin over the horn after first clipping the hair off the region. Do not get the stick too wet or it will be apt to run down over the side of the head, burning off the hair and causing needless pain.

"If dehorning is not done at this time, wait until the horn has made a fair growth and then use either the saw or the clippers, which must be used in any case if feeders are purchased."

WHEN IS BEST SEASON?

Clippers are quicker and less painful than the saw, in the opinion of Mr. Mann. They make a cleaner cut, however, which bleeds longer than that made with a saw. In either case, one should cut a little below the union of the horn and skin or the horn will start growing out again.

In this part of the country the best time for dehorning by the last two methods is in October or the latter part of March; that is, neither in really cold weather nor in fly time. In fly time the animal is somewhat run down and flies cause great suffering, prevent the wound from healing, and are a source of infection.

For a few days after the operation avoid giving the cattle dusty hay or other feeds in which there is much dust, as the wounds are liable to become infected and cause trouble.

PRIZE WINNERS FROM WEST VISIT COLLEGE

California Boys See Numerous Activities of Institution—Are from 400-Acre Farms

A group of 24 high school agricultural club contest winners from California on the third transcontinental tour spent a half day in Manhattan inspecting the Kansas State Agricultural college. This was the only stop between Denver and Chicago with the exception of an hour at Kansas City. They will return to California by a southern route.

The average age of the members of the party is 17 years. Most of them have completed two years of high school work, and they live on farms that average 400 acres. They are prize winners in boys' club contests in growing potatoes, beans, celery, onions, corn, sorghums, alfalfa, pigs, poultry, and nursery trees.

The boys were shown the agronomy farm, the nutrition laboratories, the hog cholera serum plant, the live stock, the engineering shops, and other features of interest at the agricultural college. A brief address was given by Dr. Henry J. Waters, president of the institution.

The trip is being conducted under the direction of Prof. B. H. Crocheron of the University of California.

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CHOOSE CORN IN FIELD

AT THIS STAGE PICK OUT SEED DURING HARVEST

Length, Diameter, Depth of Kernel, Color, and Conformity of Type Are Important Matters to Consider. Points Out R. K. Bonnett

The most satisfactory method of selecting seed corn at this season of the year is to choose the corn as it is being gathered in the field, according to R. K. Bonnett, instructor in farm crops in the Kansas State Agricultural college.

"The seed may be placed in a box on the side of the wagon," said Mr. Bonnett, "and thus be kept separate from the other corn. The main things to consider in choosing an ear for seed are length, diameter, depth of kernel, color, and conformity to type."

TAKE PLENTY OF EARS

"Ears should be uniformly large and well proportioned. The color should be uniform and the indentation typical of the variety. The cob should be as small as possible and still permit a maximum growth of the kernel. Corn for seed should not be chosen from stalks advantageously located, and about twice as many ears as are needed for planting should be selected. It requires 15 ears to plant an acre."

That the filling out of the tips and butts does not deserve as much attention as is commonly given from the standpoint of yield, was shown in a series of experiments carried on at this station by C. C. Cunningham, assistant professor of cooperative experiments. These experiments covered a period of five years from 1905 to 1909, inclusive.

CORRECTS MISTAKEN IDEA

Well filled tips yielded 51.65 bushels an acre, medium filled tips 51.76 bushels, poorly filled tips 51.77 bushels. Well filled butts well rounded yielded 50.66 bushels an acre; partially rounded, 50.96 bushels; not rounded or otherwise poor, 51.04 bushels. There is a tendency, in selecting for tips and butts, to reduce the size of the ear.

The corn for seed should be stored in such a manner that it permits of free circulation of air around the ears so as to dry them readily, points out Mr. Bonnett. If they are not well dried before being subjected to freezing temperatures, the germination may be injured. A vacant room in the house that allows free circulation of air is an ideal place to store seed corn, but an attic, if well ventilated and dry, will serve the purpose almost as well. Seed houses have regular drying rooms but for the average farmer this is not practical.

Seed corn should be tested twice if possible, one test being made in the winter and the other in the spring just before planting. In the winter test one kernel should be selected from each ear and tested. In the spring the tests should be made more accurately, about six kernels being selected from different rows and also different positions on the ear. If fewer than five of the six kernels germinate, the ear should not be used.

FORCED MATING IS PLAN USED BY PIGEON RAISER

Mate for a Definite Purpose and Thus Improve Stock, Is Advice of P. J. Newman of College

Forced mating of pigeons is the only satisfactory method, according to P. J. Newman, assistant professor of chemistry in the Kansas State Agricultural college, an authority on pigeons.

"The age for mating birds is from five to eight months, depending on the breed," said Mr. Newman. "The smaller breeds mate earlier than the larger ones."

"There are two methods of mating pigeons—the natural and the forced."

In the natural method birds of both sexes are allowed to be together in the loft and so choose their mates. Using this method it is impossible to breed with a view to producing definite characteristics.

"In forced mating the males and females are placed in a coop by themselves with a removable partition between them. They are left for several days until they show signs of friendliness. The partition is then removed and the birds remain together until the mating is unmistakably completed. From 10 days to two weeks is sufficient time to keep the birds in the mating coop. They are then placed in the nesting apartment and allowed to nest."

"In forced mating one must be sure to get birds of the opposite sex as sometimes birds of the same sex will appear to mate the same as those of opposite sexes, and even build nests."

"Birds mate for life and do not require remating unless they slow down in work due to advanced age when they may be remated with younger birds to make them work faster. In some cases a mating does not give as good results as is expected. Defective young sometimes result in such cases and remating should be practiced."

"It is a prevalent idea that inbreeding is not harmful in pigeons, but this is not in accordance with the facts. Mate for a definite purpose and thus improve the stock."

"There should be no unmated birds in the loft with the mated pigeons as the unmated birds—either males or females—are quarrelsome and may cause broken eggs and injured young."

MISSOURI TIGERS HERE FOR HOME-COMING DAY

Football Event Next Week Will Draw Hundreds of Former Students—Big Game of Season

The Home-Coming event November 11—Missouri vs. Aggies—will be the big football attraction of the season at the agricultural college. Several hundred graduates and former students are expected to be on hand to do their full share of rooting for the local team. It will be the first appearance of the Missouri Tigers in Manhattan and the citizens and students will attend in force.

That tiger's tail will be twisted in advance of the game. A "pep" meeting, which will be addressed by former gridiron heroes, will be held in the college auditorium the night before the game. The band will be there and enthusiasm will run high.

The Aggies will be up against the real thing when they confront Missouri. The Tigers played a tie game against Ames, beat Washington university 13 to 0, and Oklahoma 23 to 14. Ames won from the Jayhawkers 13 to 0, and the Aggies tied Kansas 0 to 0 last Saturday. It is claimed that Missouri has the best team in several years.

"We outplayed K. U. and should have won the game in the first half," commented Z. G. Clevenger, athletic director and head coach, in commenting on the game at Lawrence. "Our defense was all that could be desired, and we gained more ground by a wide margin than the Jayhawkers. Look out for a great game with the Tigers next week. They have made a good showing, and our boys will have to make the fight of their lives."

The Aggies made 15 first downs to eight for Kansas, and gained 71 more yards through line smashes and end runs than their opponents. They gained 46 yards by means of the forward pass as against but 18 for the Jayhawkers. End runs by Randels and line plunges by Wells were features. The Kansas leader, Lindsay, was the only man who could fight his way through the Aggie defense. He tackled fiercely and surely and was in every play.

NEED NOT BUILD SHED

HOUSING FARM MACHINERY IS NOT CONSIDERED A NECESSITY

Implements if Properly Greased in Fall Will Be Adequately Protected Against Winter Weather—F. A. Wirt Tells How It Is Done

An implement shed is not a necessity in the winter protection of farm machinery if proper precautions are taken, asserts F. A. Wirt, assistant professor in charge of the department of farm machinery in the Kansas State Agricultural college.

"Frequently the farmer does not care to go to the expense of erecting sheds for storing machinery," said Mr. Wirt. "In fact he may often spend his money to better advantage in the purchase of more stock, better seed, and additional equipment. The necessity for this expenditure may be avoided to a great extent if the machinery is properly treated before it is put away in the fall."

HOW TO PROTECT MACHINERY

"When through using the grain binder remove the canvasses and store them. Grease the eye of the needle but never use oil for this purpose as grease stays on longer and is not so likely to wash off—almost any kind of axle grease will do. This advice applies to the use of grease on the metal parts of all farm machinery. Exposed gears and parts of plow bottoms should be particularly well greased."

"Remove the sickle from the mower and the shovels from the cultivators. The frame of these implements cannot be removed, but to prevent the rusting of these parts they should be painted with a coat of red lead or any other good wagon or implement paint."

"Before painting farm machinery all grease should be removed with soap and water, and if necessary, the parts should be scraped. Rust can be removed easily by the use of a wire brush and a subsequent rubbing of the surface with a piece of brick."

KEEP THE IMPLEMENTS BRIGHT

"Things that present the best appearance are those that are given the best care. This is a psychological fact that is as true in respect to the farmer as anyone else. As long as the mower keeps bright it is a machine of which the farmer may well be proud, but let it get the least bit run down and then it is easy to neglect it, until finally it is not worth the time and expense necessary to repair it."

There are so many reasons why good implements are necessary that no farmer can afford to let the winter come on without being sure that all his tools have been properly protected, in the opinion of Mr. Wirt. The use of poor machinery increases the cost of production, because of the fact that it takes longer to do a piece of work with a poor tool than with an efficient one. Time is often lost because of the necessity of making repairs at an inopportune time. Increased draft due to machinery that has not been looked after properly results in a waste of mechanical energy. All this means a loss of crops which is far more important than the increased depreciation of the machines.

WELL PREPARED SALADS HAVE DIETETIC VALUE

They Are Not Made Exclusively for Pink Teas and Ladies' Luncheon Tables, Points Out Specialist

Salad has often been considered—by mere man especially—as a delicacy, suitable only for pink teas or ladies' luncheon tables.

"In reality, salad has an important place in the diet, says Miss Helen Green, instructor in domestic science

in the Kansas State Agricultural college.

"While salad is not as substantial a dish as some included in the daily menu, there are other things to be considered," said Miss Green. "Salad set in a nest of lettuce leaves is appetizing. The dietetic value of the minerals in the fruit and vegetables and the oil in the dressing cannot be overestimated."

"Some vegetables and fruits which are quite necessary to the diet would not be utilized at all if they were not made into salads. Carrots, for example, prepared in salads in their raw state furnish valuable food elements. Salads furnish bulk, an important item to be considered in preparing daily menus."

"A simple salad is more attractive and has a better dietetic value than an elaborate mixture of expensive foods. A light salad may be served with a heavy dinner as a substitute for a dessert, adding to the dietetic value of the meal as well as reducing its cost."

"The farm housekeeper has a wide choice of salad material in her garden and orchard in the summer. Canned vegetables make nutritious and attractive salads which, served on lettuce leaves, freshen the winter dining table and furnish the elements in diet that are so necessary when heavy meals are served, and fresh fruits and vegetables are not available."

DEAD LEAVES CONTAIN LITTLE PLANT FOOD

They Have Slight Fertilizing Value, but Are Useful When Reduced to Mold, Says M. F. Ahearn

Dead leaves, contrary to common belief, have practically no fertilizing value, in the opinion of M. F. Ahearn, professor of landscape gardening in the Kansas State Agricultural college.

"Most of the elements of plant food pass into the body of the tree on the approach of winter," said Professor Ahearn. "A ton of the best quality of autumn leaves contains six pounds of potash, less than three pounds of phosphoric acid, and 10 or 15 pounds of nitrogen. The total plant food is valued at approximately \$5.70."

"Leaves are of practical value when in the proper state of decomposition. Leaf mold is used in all well equipped florist establishments for mixing with sand and garden loam to make a good potting soil. Soil made in this manner is especially valuable for ferns, palms, and other woodland and tropical plants."

"Composting leaves, manure, and rubbish is not uncommon. A low place is selected for the compost which is allowed to stand for two years. It will be found advantageous to wet the pile during dry seasons. The leaves keep the soil loose and prevent its packing together into a hard mass."

MULE RAISING PAYS WELL UNDER CERTAIN CONDITIONS

First Class Weanling Mules Are Always in Demand in Kansas

If the farmer is so situated that he must sell his colts at weaning time, there is profit in raising mules in Kansas, if one raises the right kind, according to Dr. C. W. McCampbell, associate professor of animal husbandry.

"The right kind of mule is the one in which size and quality are combined," said Doctor McCampbell. "Too often the fact is overlooked that it takes a good mare to raise a good mule. It is just as unprofitable to raise an inferior mule as it is to raise an inferior horse."

"First class weanling mules are always in demand at a good price, and are a source of quick revenue as a sideline on many farms. Ordinarily the best time to sell a mule is when he is a weanling."

TO KEEP SOIL FERTILE

MAINTENANCE OF ORGANIC CONTENTS IS OF PRIME IMPORTANCE

Question of How to Increase Crop Yields Is Discussed in Detail at El Paso by R. I. Throckmorton of the Agricultural College

Farmers should pay more attention to the maintenance of the organic contents of semi-arid soils, asserted R. I. Throckmorton, assistant professor of soils in the Kansas State Agricultural college, in an address before the International Farm congress at El Paso, Tex.

"It is a well known fact that organic matter plays an important part in soil fertility in chemical, bacteriological, and physical ways," said Mr. Throckmorton. "The decaying of this organic matter liberates large quantities of available plant food. The food of the nitrifying bacteria makes large quantities of nitrates available for the plants, and the soil becomes porous, absorbing and retaining more water."

"Soils which have been cultivated for several years without the addition of organic matter in some form are rapidly becoming deficient in this material. The loss is more rapid in warm, dry regions than in humid sections and also greater in continuous grain farming than where a rotation which contains a grass is practiced. Thus the climatic conditions and agricultural practices of the great plains region are such as to rapidly destroy this very important material."

"Chemical determinations of native soils and adjoining soils cultivated to wheat for 30 years in Russell county, show that the cultivated soils have lost 30.5 per cent of their nitrogen and 34.5 per cent of their organic matter. Similar determinations in Reno county show that the cultivated fields have lost 43.5 per cent of their nitrogen and 51.3 per cent of their organic matter. These are not exceptional cases but two instances of what is happening throughout the wheat belt where crops are grown continuously."

INCREASE ORGANIC CONTENT OF SOIL

"The question which immediately arises is: How are we to increase the organic content of our soils? Many methods have been suggested but all of them have not proved satisfactory. Use of green manure crops, application of straw and other crop residue, and application of manure are methods used in various sections of the country."

"At various times it has been suggested that green manure such as cowpeas, sweet clover, or rye be plowed under to increase the organic content of the soil. Such a practice has its place in agriculture, but is not well adapted to the section of the country under discussion, because these plants use large quantities of water in their development and demand the use of the soil during one season. In addition to this, they leave the soil too dry for seeding to winter crops the fall the material is plowed under, and frequently there is not sufficient moisture in the soil during the winter and early spring months to decompose the coarse material. The layer of undecayed organic matter will separate the surface soil from the subsoil, thus leaving the soil in poor condition for spring crops."

HINTS ON CROP ROTATION

"Experiments have been conducted at the Fort Hays experiment station with green manuring crops compared with fallow in wheat production. The rotations followed were fallow, wheat, corn, barley; cowpeas for green manure, wheat, corn, barley; rye for green manure, wheat, corn, and barley."

(Concluded on Page Four)

THE KANSAS INDUSTRIALIST

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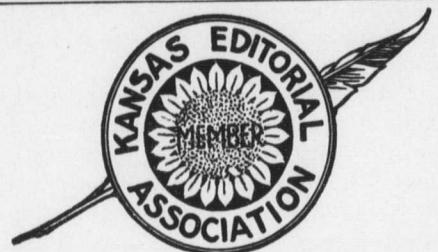
H. J. WATERS, PRESIDENT.....Editor-in-Chief
N. A. CRAWFORD.....Managing Editor
J. D. WALTERS.....Local Editor
ADA RICE, '35, M. S. '12.....Alumni Editor

Except for contributions from officers of the college and members of the faculty, the articles in THE KANSAS INDUSTRIALIST are written by students in the department of industrial journalism. The mechanical work is done by the department of printing. Of these departments Prof. N. A. Crawford is head.

Newspapers and other publications are invited to use the contents of the paper freely without credit.

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WEDNESDAY, NOVEMBER 1, 1916

SELECTING SEED CORN

This is not the best time to select seed corn, but it is better than any later time will be. As a member of the agronomy faculty of the college points out elsewhere in this paper, the corn should be chosen as it is being gathered in the field, if the selection has not been made at an earlier date.

This has decided advantages over waiting until the corn is being unloaded at the crib. It has still greater advantages over the selection of the seed from the crib just before planting in the spring. The most important advantage of selecting in the field is that it gives the farmer a chance to see the character of the stalk from which the seed corn is taken and also to see that it is not from stalks situated in particularly advantageous positions.

As has been pointed out often, seed selection is of fundamental importance to the corn crop. If the seed lacks vitality or comes from poorly developed ears or weak stalks, all the cultivation in the world will not insure a good crop. It is as foolish to expect good yields of corn from poor seed as to expect calves of purebred characteristics from scrub parent stock.

A NEW PAPER MATERIAL

The extreme shortage of paper and the consequent high price have caused every effort to obtain new materials for the manufacture of paper. In the investigations looking to this end the United States department of agriculture has taken a leading part.

The latest tests by the department have had to do with the use of hemp hurds, which consist of the woody inner portion of the hemp stalk broken into pieces and separated from the fiber in the processes of breaking and skutching. These are not used at present for any purpose that would compete with their use for paper.

The department of agriculture has issued a bulletin that is particularly interesting not only in that it deals with this product as paper making material but also that it is printed on paper that is made from hemp hurds. In appearance and also by actual tests, it is No. 1 machine finish paper. Concerning the use of this product for paper manufacture, the department makes these statements:

"Hurds are available only from machine-broken hemp, for the cost of collecting them from the hand brakes would be too great.

"About 7,000 tons are now available in restricted localities in Ohio, Indiana, Wisconsin, and California.

"The quantity is likely to increase as the use of machine brakes increases.

"The hurds may be baled in hemp-fiber presses, with partial burlap covers like those on cotton bales, or possibly chip-board covers.

"It is estimated that the farmers

may deliver the bales on board cars profitably at \$4 to \$6 per ton."

All inventions have come as the need for them developed. This will be the case with new processes and materials for paper making. The need is now present and the next few years will doubtless see the employment for this purpose of products formerly regarded as waste.

TRACTORS MORE POPULAR

Tractors are gaining in popularity in Kansas, according to the returns to the state board of agriculture showing 3,932 in the state March 1, 1916, as compared with 2,493 for the year preceding. The increase in the year amounts to 1,439, or only a little less than 60 per cent. This verifies the general belief that Kansans rapidly are adopting this new farm power. Under suitable conditions its use is an important factor in reducing cost of production and in bringing more extensive areas under cultivation. Tractors in Kansas are more numerous in the prominent wheat-growing counties.

This year's census reveals tractors in every county except Wichita. Pawnee county reports the largest number of tractors with 113, followed by Ford and Sedgwick with 108 each, Reno 107, and Barton 106.—Farmers Mail and Breeze.

A BUYER WANTED

"As it is getting near apple picking time, we are beginning to want some one to come and buy our apples. Our crop is not big and the fruit is not good this year as we did not spray. But as apples are very scarce we feel like we should be able to sell our apples at a pretty fair price. Please send a buyer to us."

Such inquiries are altogether too common, yet we do not see as many of them now as we did a few years back. And it invariably happens in such cases that the buyer never comes, or if he does it is merely to turn up his nose and go on his way. Nobody wants to buy poor apples, and any man who is content to raise nothing but poor apples can only keep right on hunting for his buyer until he locates him at the vinegar plant or evaporator.

The day before apple picking begins is a poor time to hunt for a buyer. It is better by far to begin now to look for your buyers of your 1917 crop and lay your plans accordingly. Good apples never go begging, and it does not matter much how big the crop may be, the fancy stuff always commands a living price. If any apple grower is content to grow vinegar stock that he must sell at 20 or 30 cents a hundred pounds, he is almost as much of a menace to the fruit business as San José scale. He needs a dose of spraying, and the sooner he can be sprayed with a large application of enthusiasm, ambition, and progressiveness, the better off he and all the rest of us will be.—The Fruit Grower.

MULE PROSPECTS

Soon after the beginning of the war transportation for cotton was practically cut off with the foreign markets. The cotton growers of the south, who are the principal buyers of mules, were in a very bad condition financially. Cotton was very cheap. Money being scarce forced those buyers to purchase fewer and cheaper animals. This developed a market in the south for the rejects of the smaller army horses. This trade has grown steadily. It has opened an outlet for the inferior horses of this class, with the result that mule prices did not advance as many had expected.

The army buyers are not so particular now as they have been in the past, and are taking a larger per cent of horses offered. The rejects are reasonably well cleaned up. More prosperous times in the south indicate a better market for southern mules and a better class of stuff. Cotton prices promise to be exceedingly good, which means better times with cotton growers. The average cotton planter is asking for bigger and better mules. Mules intended for the southern market should be in good flesh and ready to sell be-

tween the first of December and the first of February. January 1 is usually the best time for this market. When the southern trade is again normal, there will be a greater demand for the larger mules. We can only see a bright future in years to come for mule breeders who produce the right kind.

Owing to the fluctuation in the prices of mules, many farmers have ceased to patronize jacks, many not having bred their mares to anything. When normal conditions are restored there will be a good demand for jacks. Anyone owning a really good young jack should not sacrifice it, as there will be plenty of buyers for the better class.—American Breeder.

window in the hall partition. Increased office room and better light result.

D. G. Fairchild, '88, has finished his season's work in diseases of nursery stock at Geneva, N. Y., and is back at his desk in the department in Washington.

J. S. Hazen, '89, has been transferred from Santa Fe to San Francisco by the signal service, in whose employ he has been for more than two years past.

The wheat is up all over the farm, and is growing nicely, the continued warm weather favoring its progress, and although sown late has a good start and promises well.

Value of County Agent Work

Paul V. Maris

COUNTY agent work was started in the United States for three important reasons:

1. A vast fund of agricultural information, assembled at an enormous cost to our federal government and our several states, has not been made use of by a satisfactory number of the people on the farm. The present assistant secretary of agriculture, Carl Vrooman, is authority for the statement that the information assembled has cost the nation \$250,000,000. The agricultural bulletin, institute lecturer, the farm paper article, the state demonstration farm, all these and other agencies have played and are playing their part; but experience has taught that the ocular demonstration of the improved variety, the better method of culture, or the standard market grade, is the most effective agency for bringing about the wide-spread adoption of better methods.

2. Again, in every community there may be found side by side on adjoining farms the man who has solved a problem and the man who is expending time, labor, and money to work out independently a solution to the same problem. Every neighborhood has its farmer who is eminently successful in some particular line. But he is busy, having neither the time nor the feeling that he can with dignified propriety advise others of his own success. His knowledge, therefore, fails to find its way across the narrow country road to the nearby neighbor. Here then, as the common carrier of the communities' good practice, is found a second important function by the county agricultural agent.

3. Farmers have met at conventions, in grange halls, and country schoolhouses and after the meeting some one has said: "That's good, but what are we going to do about it? We have talked it over before." The difficulty is that there has been no one to bring about cooperative shipping after it has been decided to ship cooperatively; no one to get quotations and assemble orders for the car of lime; no one to find the market for the disease free potato seed the community club has grown; no one to organize the cow-testing association or interest the boy in his club project; no one to represent the community or the region, to stimulate it, to point the way, to project meetings, policies, methods of work as applicable to the place, to bring in experts and specialists when needed, to have an office in which the facts pertaining to the agriculture of the region are assembled and where they will be available for any person who desires them, no one, in short, to do for the community those things which must be done cooperatively and cannot be done by the individual acting independently. Here is a third reason for the county agent.

A QUARTER CENTURY AGO

Items from The Industrialist of October 31, 1891

Mrs. Wells of Kansas City visited her son in college on Tuesday, and expressed delight with the college.

Assistant Chemist Breese has enjoyed a visit from his brother, of Cottonwood Falls, for a week past.

Bulletin No. 24, now going through the press, deals with the staggers in horses as a result of feeding moldy corn.

Professor Georgeson is on the lookout for about 20 head of steers which he expects to feed experimentally during the winter.

Mrs. Fairchild is spending the week in Kansas City with her daughter, Mrs. Kirshner. The president joined in the visit last evening.

W. T. Swingle, '90, is gaining an excellent name among the workers in vegetable pathology at the department of agriculture in Washington.

A large number of students testified to their interest in politics by attending the open meeting of College Hill alliance, Tuesday evening.

The secretary's office is greatly improved by the addition of a large

G. W. Wildin, R. A. Clark, and J. L. McDowell visited Parsons, Sunday and Monday, as delegates from the college association to the Inter-State Convention of the Y. M. C. A.

The sugar beets raised by farmers of the state for experimental purposes are coming in from all quarters at the rate of from 10 to a dozen packages a day. They are a fair average lot.

Eugene Fairchild, a grandnephew of President Fairchild, is visiting at the college for a few days. He is on his way east from Texas, where he was employed in the rain making experiments of Mr. Dyrenforth.

The stock in the barn receive a daily ration of mangels, grown on the farm this summer, which yielded at the rate of 14 tons to the acre. They prove to be very acceptable feed with hay, corn, and sorghum fodder.

The farm department is building a shed on the east side of the corn cribs, as authorized by the board at their last meeting, under which to shelter wagons and other implements that cannot be accommodated in the regular shed.

AUTUMN

Thomas Hood

The autumn skies are flushed with gold
And fair and bright the rivers run;
These are but streams of winter cold
And painted mists that quench the sun.

In secret boughs no sweet birds sing,
In secret boughs no bird can shroud;
These are but leaves that take to wing
And wintry winds that pipe so loud.

'Tis not trees' shade, but cloudy glooms
That on the cheerless valleys fall,
The flowers are in their grassy tombs
And tears of dew are on them all.

SUNFLOWERS

The trees must feel up to the minute
with their scantily covered limbs and
their gaudy autumn dresses.

It is rumored that one of our prominent citizens is going to sell out and buy a pound of butter and a half-dozen eggs.

The nice thing about a nothing-to-nothing score is that everybody is satisfied that his team easily outplayed the rivals.

After next Tuesday there will be only two kinds of politicians in the country, those who knew it all the time and those who never will understand it.

Our unfortunate friend, the husband of Mrs. Snippy, complains that during the mornings and the evenings he can't hear his wife for the chatter of the blackbirds that roost in his trees.

RECENT BOOKS

Connelley, William E. History of Kansas Newspapers. Octavo, pp. 373, illus. Topeka: Kansas State Printing Plant.

A publication of particular value and interest to all persons interested in Kansas newspapers is the "History of Kansas Newspapers," prepared by William E. Connelley, secretary of the state historical society. The volume contains Captain Henry King's story of "Kansas and Kansas Newspapers;" biographical sketches and pictures of leading journalists of the state; and a brief history, arranged by counties, of all the newspapers ever published in Kansas. Needless to say, the work, like all of Mr. Connelley's, is well done and the book is one of the most interesting and valuable contributions made to Kansas history in many years.

Stratton, W. T., and Remick, B. L. Agricultural Arithmetic. 12mo, pp. 239 + x. New York: The Macmillan Company. 50 cents.

The first comprehensive arithmetic dealing fundamentally with farm and rural life problems, is the work of two members of the faculty of the Kansas State Agricultural college, Professors W. T. Stratton and B. L. Remick. The volume is intended for advanced classes in elementary rural schools, agricultural high schools, and high schools offering agricultural courses.

The book does not neglect the fundamental mathematical concepts but uses these constantly in application to agricultural facts. The problems bring out important and thoroughly verified facts with reference to agriculture. The data are taken from such sources as reports of the United States census bureau and bulletins of the department of agriculture, and the state agricultural experiment stations. For example, there are tables of the average weight of corn silage for silos of different depths, of feeding standards, and of digestible nutrients in feeds.

A chapter on farm accounts will prove of special value to the practical farmer as well as to his children. Indeed, there are many things in the book which the farm owner may be able to use with great profit.

The arrangement of the work is pedagogically sound as would be expected from the ability and experience of the men preparing it.

The book, though published but a few weeks ago, has already been adopted in agricultural courses in all parts of the country.

AMONG THE ALUMNI

J. E. Brock, '08, is farming in the Imperial valley.

Miss Meta Sheaff, '16, is teaching in Kansas City, Kan.

Miss Amy Briggs, '16, is teaching home economics at Kinsley.

Joe Vale, '14, former basketball player, was in Lawrence for the game.

Miss Ethel Boyce, '14, of Kansas City spent last week visiting friends in Manhattan.

A. G. Kittell, '09, editor of the Nebraska Farm Journal, Omaha, was at the college Thursday.

Miss Nettie Hendrickson, '16, who is teaching domestic science at Argonia, visited in Manhattan Sunday.

R. A. Oakley, '03, has been in California inspecting seeds for the contract for congressional seed distribution.

Miss Maude Estes, '10, is teaching home economics in the high school at Lincoln and enjoying a full measure of success.

H. R. Reed, '07, who has been located in the Philippine islands, is now at Bard, Cal., in charge of the forage crop investigations.

Jay Stratton, '16, was a college visitor Saturday. After November 1 he will be located with Archie Glenn, '16, on a large fruit farm near Wichita.

Miss Hazel Groff, '16, who is teaching domestic science in the Lansing high school, was in Lawrence Saturday for the K. U.-Aggie football game.

G. T. Ratliffe, '11, formerly with the experiment station at Bard, Cal., is now at Newell, S. D., in charge of experiments in irrigation and crop rotation.

The friends of Miss Stella Ballard, '10, will regret to learn of the death of her mother, who passed away at a health resort in Wisconsin late in the summer.

H. N. Vinall, '03, who is with the United States department of forage crop investigations, visited southern California recently studying sorghum varieties.

M. E. Hartzler, '14, who is with the international commerce railroad valuation survey, was a recent Manhattan visitor and while here had Masonic degrees conferred upon him.

Miss Gertrude Palmer, '15, is in the Sheridan county high school at Hoxie. She is teaching general science, ancient history, and domestic science and art. She reports that the school is prospering.

H. M. Hanson, '10, sergeant major, First Kansas regiment, was a visitor last Friday. He is a member of the law firm, Hale and Hanson, La Crosse, and expects to return to his law practice as soon as he is discharged.

Harrison Broberg, '11, has been visiting friends and relatives in the city the past day or two. He has just resigned a position with the Santa Fé to engage in drainage work with I. E. Taylor, '13, and A. A. Anderson, '14.

Miss Laura Pendleton, for the past two years a student in home economics in the college, is instructor in the subject in Grafton hall, Fond du Lac, Wis. Miss Pendleton is a graduate in fine arts of the University of Kansas.

D. W. Working, '88, of the United States department of agriculture, visited the college last week. Mr. Working, who was at one time on the staff of THE INDUSTRIALIST, expressed much interest in the college work in industrial journalism and printing.

Mrs. Carrie (Gates) McClintock '10, and Mr. McClintock, together with Miss Maude Estes, '10, and Miss Ruth Kellogg, '10, spent a very pleasant week end at the home of Mrs. Christine (Heim) Moffitt, '10. Mr. and Mrs. Moffitt have a fine country home near Lincoln.

Frank I. Root, '13, is beginning his third year in the Winfield high school.

His work in agriculture there has been exceptionally successful. Last year, in addition to managing the farm plot, the boys raised some hogs, and realized \$1.15 per bushel for their corn by feeding it to the hogs. Mr. Root has purchased a large farm and will begin to operate it next year.

BIRTHS

Born, to Mr. George S. Strother and Mrs. Ethel Strother, '16, Speed, Kan., on October 24, a daughter, Lois Anna.

MARRIAGES

REED-WOLCOTT

Miss Wauneta Reed and Leroy B. Wolcott, '12, were married at the home of the bride in Hastings, Nebr., on October 24. They will reside at Shelton, Nebr., where Doctor Wolcott is in business.

GOHEEN-JOHNSON

Miss Ida Ruth Goheen of Clay Center and Mr. Carl O. Johnson, '14, were married Wednesday morning, October 25, at the home of the bride in Clay Center. They will be at home at 1010 Sixth street after December 1. Mr. Johnson and Mr. C. W. Shaver, '15, are conducting a successful business.

To the Alumni Editor of THE INDUSTRIALIST:

Inclosed find a draft for \$20 to pay for a life membership in the Alumni association. I am glad of the opportunity to help in a movement which may mean so much to our Alma Mater, her alumni and her students, present and future.

We look forward each week to your column in THE INDUSTRIALIST, a feature which makes it doubly welcome.

We were delighted to see Miss Clara Pancake, '03, who called on us this summer while spending part of her vacation in Boulder. M. S. Brandt, who was at one time an instructor in Doctor Walter's department, is the president and general manager of a newly organized company which is to operate in the gold mining region at Sunshine, which is in the Boulder district.

Last summer we heard or caught glimpses of several cars bearing K. S. A. C. or Manhattan pennants. The latch-string on the cottage nearest the power plant in Boulder Cañon is always out to those who love K. S. A. C.

Very truly yours,

MAY HARRIS BURT, '05.

Boulder, Col.

BLAIR IN CALIFORNIA

R. E. Blair, '10, now in charge of the government experiment station, Bard, Cal., and Mrs. Winnie (Cowan) Blair, '11, were called home to attend the funeral of Mrs. Blair's father, Mr. N. M. Cowan, Kensington, Kan.

Mrs. Blair will remain in Kensington for some little time but Mr. Blair has returned to Bard, visiting a few days in Manhattan on his way back to California.

The Degletnoor date palms on the Heber date palm plantation, of which Mr. Blair has been in charge, have been sold. Mr. Blair is superintending their removal from Heber, Cal., to Indio, Cal., a distance of about 70 miles. This plantation is the one that THE INDUSTRIALIST has mentioned several times as the Swingle-Chumard plantation and is being moved to Indio because of better ripening weather at that place, the humidity being less than at Heber.

A considerable amount of earth is left on the palms and they are taken by motor trucks to the train and unloaded from the train to motor trucks and taken to their new location. This plantation is the oldest commercial date palm plantation in the United States. Some of the palms are 25 years old and 22 feet high.

In the summer an impromptu alumni association was arranged by J. Z. Martin, '10. Among those present were R. E. Blair, '10, and Mrs. Winnie (Cowan) Blair, '11; G. T. Ratliffe, '11; Harlan Smith, '11; Leo Price, '11, and Mrs. Vida (Cowgill) Price; and James Nichols, '12.

CARE OF BROOD SOWS

ECONOMICAL RATION TOGETHER WITH EXERCISE IS FACTOR

Scales Should Indicate Steady Gain in Weight Until Farrowing Time—Other Timely Suggestions by Ray Gatewood of College

An economical yet well balanced ration, together with plenty of exercise, is the main essential to the successful wintering of brood sows, according to Ray Gatewood, instructor in animal husbandry in the Kansas State Agricultural college.

"When the sows come in from pasture they should be in good physical condition but not too fat," said Mr. Gatewood. "They should be started on grain gradually."

"In selecting the ration one should remember that economy is essential. In order to get the best results the sows should be gaining slightly at the time of breeding. They should continue to gain until farrowing time, but care must be exercised in order that they do not become too fat. Sows that are extremely thin, or in an emaciated condition at the time of breeding, are likely to produce small litters of unthrifty pigs."

RATIONS FOR BROOD SOWS

"Feeds which may be fed to the best advantage are corn, alfalfa hay, shorts, bran, and tankage. To get the most economical ration, the bulk of the feed should consist of corn and alfalfa hay. Allow the sows alfalfa hay at will, but corn must be fed in limited quantities, and may be supplemented by shorts and a small amount of tankage. Bran is of special value in the ration—it adds bulk and has a beneficial effect on the digestive system."

"Corn may be fed on the cob, shelled or ground depending upon the facilities. Alfalfa hay of the last cutting is the most desirable, as the stems are much finer and there is a larger per cent of leaves. This sort of hay is more palatable, and will be consumed with less loss. From five to 10 per cent of tankage will furnish enough protein. This depends, however, upon the amount of protein found in the other feeds. Always remember in feeding the brood sows that they are being fed mainly for the growth of the foetus or unborn young."

"Exercise is essential in the care of brood sows. Sows in the winter will not take any more exercise than they are forced to take. By feeding them at the opposite end of the lot from the hog house they may be compelled to exercise. The sows should have the run of a warm, roomy, dry, and well ventilated house. They should be supplied with plenty of fresh water at all times. If the chill can be removed from the water in the coldest weather it is highly desirable."

SERVE CHOWDER AND KILL TWO BIRDS WITH ONE STONE

This Combination Said to Be Cross Between Soup and Stew

Substitution of one dish for two without taking from the meal any of its nutritive value can be accomplished by means of a chowder, suggests Miss Lenore Richards, assistant in domestic science in the Kansas State Agricultural college.

"A chowder—a cross between a soup and a stew—may be served as the main course of a luncheon," said Miss Richards. "It contains the nourishment of a stew but may be served as a soup, taking the place of two dishes. Fish chowders are common in the east and clam chowder is a popular dish, but corn chowder probably is more nearly within the reach of all housewives."

For a corn chowder the needed materials are a can of corn, a few potatoes, a slice of pork, an onion, some crackers, milk, and butter, according to this specialist. A thick piece of salt pork is cut in small pieces and fried, a small onion fried in the fat for five minutes and four cups of previously boiled potatoes cut in small pieces and added to the strained fat.

Four cups of scalded milk and a can of corn is then added and the

whole heated to a boiling point. Add three tablespoonfuls of butter and eight or nine crackers and season to suit the taste. The same amount of fish which has been cooked for 20 minutes can be substituted for the corn in a fish chowder.

IT DOESN'T PAY TO SAVE SEEDS FROM THE GARDEN

Better Leave the Work to Specialists, Advises Professor Ahearn

Saving vegetable and flower seeds is a risky practice for the average gardener to follow if he desires the best results. The growing of seeds has become an art beyond the knowledge of those who are not specialists, in the opinion of M. F. Ahearn, professor of landscape gardening in the Kansas State Agricultural college.

Seeds are bred, points out Professor Ahearn, and as this is an expensive process, it is well to leave it to those who make this work a business. The seed merchants are becoming more cautious all the time, and the purchaser is protected against inferior grades.

The climatic conditions in Kansas are generally unfavorable to the maturing of vegetable seed crops, and this is another argument against saving seed from the home garden. Saving flower seeds is more practicable as they usually mature later in the season.

Particular care should be taken in gathering and storing seeds. All pulpy seeds should be washed free from pulp and then dried. Seeds that grow in pods may be kept in the pods, as they serve as a protection. All seeds should be kept in a warm, dry place in the winter months.

COLLEGE FOOD SPECIALISTS RENDER VALUABLE SERVICE

Tell Kansas Institutions How to Reduce Cost of Living

How can we live within our means and yet serve proper food? How can we buy provisions to the best advantage?

These questions are asked every day by the average housekeeper. Answers to them are becoming less easy to obtain without the help of specialists.

A realization of the high cost of living and of the fact that a balanced ration is best from every point of view has impelled several charitable institutions of the state to seek the aid of the Kansas State Agricultural college authorities in food problems.

Plans have been prepared to meet the needs of the different establishments. Menus have been submitted for use in the orphan's home at Atchison at the request of the superintendent. Plenty of eggs, milk, and milk products have been recommended as these foods are necessary for growth.

The William Small memorial home for aged women at Leavenworth desires assistance in scientific buying and planning of meals. It has no endowment but is supported by subscriptions, donations, and admissions—hence its need of economy.

KEROSENE IS BETTER THAN WHITEWASH FOR HENHOUSES

Lime Mixtures Leave Ideal Crevices for Propagation of Vermin

A kerosene spray for the interior of the poultry house is preferable to whitewash, according to N. L. Harris, superintendent of the poultry farm at the agricultural college.

"A spray consisting of 97 per cent kerosene and 3 per cent of any of the standard stock dips is best for this purpose," said Mr. Harris. "When this is used there is no tendency for the mixture to scale off as is the case with lime wash. The lime mixture leaves ideal places behind the scales for the propagation of parasites."

"Lime wash is effective inasmuch as it covers the parasites and thereby kills them, but as soon as it begins to peel it is worse than useless. If lime wash is used, however, a 3 per cent solution of carbolic acid should be added to provide a disinfectant."

DON'T BE IN A HURRY!

MULCH STRAWBERRIES BUT DO IT LATER IN THE SEASON

This Operation Is Essential if Perfect Fruit Is Desired—Prof. Albert Dickens Advises Use of Sudan Grass

Don't be in a hurry to mulch the strawberries, as the vines continue to grow until late in the fall. The last of November or the first of December is the proper time for mulching in this state, but don't neglect to do it then.

Mulching is an essential to success in growing strawberries, points out Albert Dickens, professor of horticulture in the Kansas State Agricultural college. It not only insures clean fruit, but it aids in retaining moisture in the soil and assists in conserving fertility.

Mulching is a protection against the alternate freezing and thawing so common in this state. This process is a serious menace to strawberry growing as it breaks off the many small feeding roots of the plants, thus destroying their source of nutrition and resulting in diminished crops and berries of poor quality. In fact the plants are sometimes killed.

MULCH RETARDS DEVELOPMENT

The commercial growers in the northeastern part of the state need to mulch for another important reason. The berries in Doniphan county begin to ripen soon after the Arkansas and southern Missouri berries have been placed on the market. The market is soon flooded and berries from Wathena and Troy are sold for a price sometimes lower than the cost of production. A mulch on the strawberry patch retards plant development in the spring and would make it possible for the berries to ripen at least one week later and thus avoid competition with berries from another locality at the same time.

As to materials, any kind of straw will produce the required results but the grain straws are not desirable because of the seeds they contain which make extra work and expense in the spring because of the necessity of removing the weeds and grain plants. This can be avoided to a certain extent if the straw to be used for mulching is placed in the hen yard for a day or two before it is applied. The hens remove the seeds and grains that will give trouble, at the same time getting food and needed exercise for themselves.

VALUE OF SUDAN GRASS

Sudan grass makes an exceptionally good mulch, in the opinion of Professor Dickens. It has no seeds to make trouble and it will not mat down and smother the plants as ordinary straw is likely to do. Practically the only objection to Sudan grass is the high cost of the seed. It will cost approximately \$1.60 to seed an acre as it sells for 8 cents a pound. This extra cost, however, probably will be offset by the amount saved by not having to hoe weeds out of the patch in the spring and in avoiding the necessity of separating at that time.

Sudan grass for this purpose can be planted in mid-summer on land that has already produced a spring crop, or it may be planted in an old strawberry patch after the last crop has been harvested. The grass is applied to the field at the rate of 4 tons to the acre. Slough hay also makes good mulch and is used in localities where it is plentiful.

Farm bureau work in Kansas counties is bringing about close cooperation between the farmers in many communities. I. N. Chapman, county agent in Leavenworth county, reports that in Reno township a farm bureau community club has been formed at Six Corners by the members of the farm bureau of Reno township. At a recent meeting of this club, 80 were present. The greatest problems in this particular district are how to drain the land subject to overflow and how to improve the soil. Definite steps are being taken to overcome the obstacles.

AUTO BRINGS NEW LIFE

MOTOR CAR IMPORTANT FACTOR IN DEVELOPMENT OF KANSAS

Walter Burr Says 170,000 Are "Rounding Up" People of State—Rural Districts Have Been Put in Touch With Outside World

That the 170,000 automobiles in Kansas are "rounding up" the people of the state and bringing about a revolution in the social life, is the assertion of Walter Burr, director of rural service in the Kansas State Agricultural college.

The automobile is no respecter of country, but may be seen spinning over the prairies where the railroad has not yet penetrated, points out Mr. Burr. The farmer does not have to stay at home now and "rust" because he is so far from the railroad and the city that old Dobbin is not equal to the journey. He gets into his car with his family and they occupy the best seats at the wheat show, the farmers' institute, the chautauqua, mountains or sea shore, or whatever form of entertainment that is going on to make life better and richer.

PEOPLE ARE CONTENTED

"Pottawatomie county has been particularly benefitted through the introduction of the automobile," in the opinion of Mr. Burr. "The people living in the inland section of the county were so far from the railroad that it was not possible to get them back and forth conveniently in a stage coach but now the auto-bus makes the trip and opens the way to the outside world. Many of the farmers have their own machines and the result is a happier and more contented people.

"In some counties of Kansas the consolidated school can be a reality only by using the auto-bus. In Seward county many of the pupils could not reach the school were it not for the motor car. The automobile demands good roads, and thus traffic is benefitted. The rural mail routes have been extended and the country communities broadened since they have been kept in touch with the world's affairs through Uncle Sam.

"When there is an automobile on the farm, the boys and girls get a new insight into industrial education. They soon learn the mechanism of the machine and it often creates a desire to obtain additional knowledge along mechanical lines."

TO KEEP SOIL FERTILE

(Concluded from Page One)

"In the first rotation where fallow was used, the average yield for eight years was 21.3 bushels an acre. When cowpeas were used in place of the fallow the average yield was 13.4 bushels an acre, and when rye was used as the green manure crop the average yield was 12.9 bushels an acre. In addition to the differences in yield there was considerable extra expense encountered in seeding the green manure crops. In view of these facts, green manure crops should be used only as a last resort.

DO NOT BURN THE STRAW

"The straw produced in the wheat belt is a valuable by-product of the wheat industry and should be returned to the field instead of being allowed to decay in large piles in the field, or even worse, burned to get it out of the way.

"Straw may be used satisfactorily in two ways—as bedding for live stock and later applied in the field, or it may be applied direct as a surface dressing during the late fall and winter months. When applied in this way the straw will have decayed sufficiently to have no bad effect on the soil when plowed under the following season. In addition to adding considerable organic matter to the soil, straw will aid in preventing blowing, in retaining the moisture that falls as snow, in preventing winterkilling, and will add considerable plant food to the soil.

USE OF MANURE RECOMMENDED

"Undoubtedly manure is the best form in which to apply organic matter to the soil. It has all the advan-

tages of green manure crops and straw, and many more, for it decays more rapidly and adds much larger quantities of plant food. With manure as with straw, many objections have been made to its use throughout the areas of light rainfall. Some of these objections are due to too heavy application, poor seasonal conditions, or are purely imaginary on the part of the farmer because he doesn't enjoy hauling and spreading manure on his fields.

"It is true that yields have been decreased through the use of manure in various places but invariably the decrease, has been brought about by carelessness in applying very large quantities. Such applications will tend to cause the plants to make a very rapid and heavy growth of straw in the spring and thus use large quantities of water and not leave sufficient moisture to mature the crop, or if the season proves to be extremely dry the heavy applications will cause a burning of the crop early in the season and thus decrease the yield.

SOME IMPORTANT EXPERIMENTS

"Reasonably light applications, however, will increase the present yields and aid in keeping the soils in good condition. Experiments conducted over the hard wheat section of Kansas during the last three years justify this statement. In 1914 experiments were conducted with manure on wheat in six localities. The average yield of the manured fields was 24.49 bushels an acre and of the unmanured 21.45 bushels.

"In 1915 experiments were conducted in three localities in which the manured fields averaged 26.55 bushels an acre as compared with 20.47 bushels for the unmanured fields. The experiments were conducted in nine localities in 1916 with an average yield of 22.55 bushels an acre on the manured fields and 17.75 bushels on the unmanured fields. The average increase from the use of manure on wheat from the 18 determinations extending over a period of three years is 5.64 bushels an acre. The amount of manure applied on these fields varied from six to 10 tons an acre. Heavier applications than this should not be made and lighter applications are advisable.

"If the fertility of the soils of the light rainfall area of the United States is to be maintained, more live stock must be kept and the best possible use made of the manure produced. By-products from the grain fields should also be utilized."

CHILD SHOULD LEARN TO SPEND HIS MONEY WISELY

Youngster Be Given Regular Allowance, Believes Miss Frances Brown of Extension Division

Every child should have an allowance as soon as he has a sense of the value of money, asserts Miss Frances L. Brown, director of home economics, division of extension, in the Kansas State Agricultural college.

"Some children have an appreciation of money values when quite young and no definite age limit can be set in regard to an allowance," said Miss Brown. "Spending money wisely is not a divine gift, and children do acquire the sense of the value of money by education.

"Children should be allowed to buy some of their necessities, but parents should go along on shopping tours to advise them although this should not be done in a dictatorial manner."

Accounts should be kept of all money received and spent, believes Miss Brown. All children should have a certain amount of money to spend independently.

In many homes the head of the family is paid by the month, and so it is convenient to give the child his allowance once a month. If possible it should be done weekly or in some cases daily.

Frequently children are paid for little household duties, but the better way is for the child to feel a responsibility for his share of the work of the home, and then receive an allowance for his necessities.

HOW TO START ENGINES

SUGGESTIONS FOR GAS TRACTOR AND AUTOMOBILE OWNERS

Heavy Grade of Gasoline Sold on Market Causes Much Trouble—Vaporizes Slowly in Cold Weather, Says W. H. Sanders

Do you have trouble in starting your stationary engine, gas tractor, or automobile? If so, here are some suggestions that may prove of value.

The heavy grade of gasoline sold on the market is responsible for much of the difficulty, in the opinion of W. H. Sanders, instructor in farm motors in the Kansas State Agricultural college. In the summer the gasoline vaporizes readily but in the winter this process takes place so slowly, due to low temperature, that the engine will not start when cranked.

"To start the motor in cold weather," said Mr. Sanders, "prime the cylinders with a liberal amount of gasoline, and let stand for five minutes. The man who is running the engine can use this time for oiling and making minor adjustments. The gasoline will take up sufficient heat, even from the cold walls of the engine, to vaporize. The engine will usually start with little trouble after this treatment."

There are a number of other ways to start an engine in cold weather, according to Mr. Sanders. It can be warmed by pouring hot water into the radiator. Hot water poured over the carburetor will cause the gasoline to vaporize before it passes into the cylinder. Ether vaporizes quickly and can be used for priming but it is expensive.

SALT AND ALCOHOL SOLUTIONS

To save the trouble of draining the radiator in the winter alcohol and salt anti-freeze solutions are used, but after all the safest and cheapest plan is to drain. The alcohol solution is expensive. The initial cost of the salt solution is less but it probably will prove expensive in the long run. The salt solution tends to eat or dissolve the metal. This action goes on slowly in the winter when the temperature is low, but the danger is that some of the salt will remain in the engine and radiator during the summer when the action is rapid.

Kerosene can be used in the radiator, and is used in a few tractors. A disadvantage is that on warm days the engine will overheat. Where the weather is cold for long periods, kerosene will prove satisfactory but its use is not advisable under Kansas conditions.

In cold weather care must be taken that the oil is feeding to the cylinders. A number of engines are so constructed that the oil cups are in a position in which they will not readily warm. The best way to overcome this fault is to use a light bodied oil, preferably the oil recommended for winter use by the manufacturers of the engine.

ALFALFA IS VALUABLE AS FEED FOR HORSES

It Is Less Expensive Than Prairie Hay and Keeps the Animals in Better Condition

Alfalfa, if properly fed, is a better and cheaper feed for farm horses than prairie hay, asserts Dr. C. W. McCampbell, associate professor of animal husbandry in the agricultural college.

In an experiment conducted with horses at Fort Riley, pointed out Doctor McCampbell, it was shown that those fed rations of alfalfa and corn were kept in better condition than those fed rations of prairie hay and corn, or prairie hay, oats, and corn.

The alfalfa and corn combination was less expensive than the other rations. The results from feeding horses on this ration showed that it required 20 per cent less grain and 25 per cent less hay, making the alfalfa ration 25 per cent cheaper than the prairie hay ration.

"Alfalfa must be considered as a concentrate and fed as such in order to get the best results," said Doctor McCampbell. "Not more than 12

pounds a day for each 1,000 pounds of live weight should be fed. Other roughage, such as sorghum, corn fodder, kafir, or Sudan grass, may be fed with the alfalfa.

"To make the best horse feed, alfalfa should not be cut until it is in full bloom and should be carefully cured in order to keep it from becoming moldy or dusty. Dusty hay should not be fed under any condition."

HOME INSTITUTE MEETINGS PROVE UNUSUALLY POPULAR

Total Attendance Is Nearly 12,000—College Specialists Speak

Fifty-two Kansas communities report successful farm and home institute meetings held in cooperation with the extension division of the Kansas State Agricultural college.

From October 9 to 21 eight specialists in agriculture and six specialists in home economics were engaged in institute work. During that time 52 organizations held meetings, 18 of which provided for two day programs, while 34 held one day conferences.

A total of 139 sessions were conducted in the course of the two week circuit with an attendance of 11,736, making an average of 84 persons at each session. This is eight more than the average attendance at institute sessions last year. In addition to the regular sessions, 19 street and high school meetings were attended by 2,895 persons—an average of 152 at each meeting.

Mahaska held the banner institute of the circuit with an attendance of 815. Others of note were Clyde with an attendance of 760 and Hanover with an attendance of 750.

DO NOT DEPEND UPON MERE LUCK IN PASTRY MAKING

Accuracy in Measurement Is Essential, Says Miss Nola Treat

Does John eat pie for dinner? Is he a victim of dyspepsia? If so the trouble may be due entirely to the manner in which the pastry is made.

Accuracy in measurements is the first essential in making good pastry, in the opinion of Miss Nola Treat, manager of the cafeteria in the Kansas State Agricultural college. Cooks who depend on luck are doomed to disappointment.

Have all ingredients measured before starting to combine them, is the advice of Miss Treat. Use only cold lard put into pastry flour by cutting horizontally with two knives. When these two ingredients have been thoroughly combined add just enough ice water so that the pastry can be handled easily. Too much water makes a tough, undesirable crust. Roll very thin, bake in a moderate oven and the result will be a pie that will melt in John's mouth and which will cause no pangs of indigestion.

COLLECT SOIL SAMPLES FOR USE IN EXTENSION SCHOOLS

Poor Policy of System of Continuous Cropping Is Shown

Soil samples from communities where the second year extension schools are to be held this year were collected last summer from all the types of soils in these communities by H. J. Bower, extension specialist in soils.

These samples have been analyzed for organic matter and nitrogen to show how much has been lost by continuous cropping. A carefully arranged exhibit of the samples has been made for each community. They have been on display at a public place in the communities where they have been collected and will be used for demonstration and explanation in the extension schools to be held in the winter.

The county farm bureau in Pawnee county is one of the newest as well as one of the most active bureaus in the state. This bureau is conducting demonstration work in farm management this fall and farm analyses are being taken by R. P. Schnacke, county agent. The farmers are cooperating in the work.

IT PAYS TO FEED WELL

WINTER CARE OF STOCK IS IMPORTANT IN WESTERN KANSAS

Number of Cattle Maintained Should Be Governed by Amount of Roughage Available—Timely Suggestions By L. B. Mann

Climatic conditions, natural protection, available crops for feed, and equipment on hand are the most influential factors in wintering beef cattle in western Kansas, asserts L. B. Mann, fellow in animal husbandry in the Kansas State Agricultural college.

"Cattle retained over winter in the western districts are generally calves, yearlings, and a breeding herd," said Mr. Mann. "Few cattle are finished in the west. Wintering stock cattle as two-year-olds is not advisable. Obviously a ration for the classes of cattle mentioned will be one of maintenance for the breeding herd, and of maintenance and growth for the young stock.

"Where a pasture provides sufficient natural wind breaks and shelter, and the climate is not too severe, housing is unnecessary, but if these conditions do not prevail it is desirable to provide shelter. For convenience during the winter the animals are best corralled.

NOW IS TIME TO FEED

"The time to begin feeding depends on pasture and weather conditions, October usually being the month in which pasture should be supplemented by meal and hay, preferably hay. Start supplementing gradually and leave the animals on pasture as late as possible, turning them out on it again as early as practicable in the spring.

"The cheaper and poorer feeds should be fed out first and when they are gone the more expensive and better keeping feeds, such as silage and well stored hay, may be used. The farmer should always be able to raise his own roughage and should govern the number of cattle kept accordingly."

To give an idea of the best adapted feeds, Mr. Mann pointed to some figures from experiments with breeding stock at the Fort Hays branch experiment station, and with calves at the college. An experiment was conducted at Hays last winter in feeding roughages alone for a period of 120 days to 20 head of three-year-old heifers in calf, which showed kafir silage and alfalfa hay to be the best combination for that district, giving an average gain per head of 104.8 pounds a head at a cost of \$7.32.

Similar experiments carried on to determine the value of adding concentrates to the ration did not show any great immediate profit, but the ultimate benefit, if any, is yet to be seen.

BEST RATION FOR CALVES

For winter feeding of steer calves, kafir silage and cottonseed or linseed meal have given the best results in experiments at the Kansas State Agricultural college, and kafir is one of the best adapted grain sorghums for western Kansas.

"The farmer must use his judgment in feeding," said Mr. Mann. "He must govern the width of the ration by the age of his stock. With mature stock, as statistics have shown, roughage alone produces good results provided alfalfa or a feed of similar composition is included to give the animals sufficient protein.

"Besides feed, the costs of equipment and labor—both man and horse—must be taken into consideration, but the cost of labor is generally offset by the value of the manure obtained, while that of equipment need not be excessive.

"Results of experimental work indicate that western Kansas, ordinarily considered merely a wheat country, presents exceptional opportunities for the maintenance and growth of herds of beef cattle."

The maintenance cost of a horse per working hour on the average farm is 7 1/2 cents. This can be reduced, by proper management, to 6 1/2 cents, according to the Missouri Agricultural Experiment station.

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TO TWIST TIGER'S TAIL

AGGIES ARE COUNTING ON TRIMMING MISSOURIANS SATURDAY

Coaches Declare Team Will Be in Good Shape—Many Alumni Are Expected Back for Annual Home-Coming—Mohler on the Wildcat

"Watch us twist that Tiger's tail," is the cry heard this week on the Kansas State Agricultural college campus—and the coaches declare it can be done.

The second annual Home-Coming event—Missouri vs. Aggies—will be the big game of the season at Manhattan. The Wildcats are preparing to give the Tigers a warm reception—one long to be remembered. It's their first game here.

Interest in the game on the part of the student body is keen. Preliminary enthusiasm will reach its height at a "pep" meeting in the college auditorium Friday evening, at which talks will be given by Dr. Henry J. Waters, president; Professors H. H. King and M. F. (Mike) Ahearn, and visiting graduates and former students of the institution. It goes without saying that the band will be on hand.

WHAT THE COACHES SAY

Preparations are being made to entertain several hundred of the old "grads" who are expected to return to Manhattan for the game and to meet old friends. A social event will be held in Nichols gymnasium Saturday night to which members of the faculty, the student body, and the visitors are invited.

"Barring accidents the team will be in good shape for the game," said Z. G. Clevenger, athletic director and head coach, today. "Missouri is said to have the best team in years, but we hope to give the visitors a surprise. Randels, whose foot was twisted in the K. U. contest, will be in the game."

"Missouri has a good football machine," commented Adolph (Germany) Schulz, assistant coach who saw the Tigers in action last Saturday. "It is fast moving and smooth running. The Missourians are confident of winning the game here—they have a clean slate thus far."

MOHLER AS NATURALIST

That a new and superior type of wildcat has been developed in Kansas was the declaration of J. C. Mohler of Topeka, secretary of the state board of agriculture, in an address before students and faculty in the college auditorium.

"They are represented by the press," said Mr. Mohler, "as comprising the football team of the Kansas State Agricultural college."

"In any new type a description is required, and as this is rather technical I have written it down."

"Average height, about six feet six, as they look to their opponents. Weight, about a ton each, according to the man underneath. Reach—A-plenty."

ARE DESCRIBED IN DETAIL

"Legs rather long; ears—what is left of them—tufted. General color, when not in action, pink; in action, from pale to dark brown. In the latter case not easily distinguished from the Kansas loam."

"Heads as hard as bullets, resembling a battering ram, with just enough bone to make them shapely but not so much as render them boneheads. A clear, bright eye, quick to detect the slightest movements, and chiefly centered on the oval, with due regard to ever shifting environments."

"Arms developed through long training into great strength, used principally in dashing their enemies to the earth with great force, and promptly pouncing upon them when in this prone condition. Their knotted, gnarled arms are one of their best weapons of

offense and protection, although their well muscled limbs carry them with great speed and force. When well under way their momentum has been known to carry them through obstacles popularly regarded as impenetrable."

WHY IS THE WILDCAT WILD?

"The range of this new type of wildcat is not limited to Kansas by any means, although this is its home. They go about during certain seasons of the year seeking whomsoever they may devour. Each season of the year, from September to Thanksgiving, is their elimination season, wherein fierce fights are staged and only the fittest survive, thus assuring a permanent high standard in development and prowess."

"In the other portions of the year they are as tame and harmless as a pet canary. In fact, a young lady here this morning informed me that one certain Wildcat was already so tame that he would eat out of her hand and follow her everywhere."

"Some of the habits of this new type of wildcat are very like those of the Lynx rufus, described in the Nature Library thus: 'When the wildcat hears the faintest movement he instantly crouches, planning to head off his victim in order to seize it at the first alarm.'"

CONFORM TO DESCRIPTIONS

"From this authority I take it that some of the habits of the wildcat have been imparted to the student body, for the encyclopedia says that 'when out hunting, the bobcat utters a wild scream from time to time, its object evidently being to startle any creature into a state of temporary innocuous desuetude. And certainly any animal would require strong nerves to remain unmoved when this jarring yell bursts through the stillness close at hand.' This is the college yell of the Lynx rufus."

"Some of this new type of wildcats are shy and exceedingly cautious about showing themselves, but all are invariably savage fighters when cornered or defending territory which they may properly consider theirs, and is sacred them, although, animal like, their curiosity to see how far they may project themselves into their enemies' territory is apparently never satisfied."

"Of this particular family of wildcats one of the wildest seems to be Randels, although I understand there is plenty of competition for that distinction."

"The other day, down in St. Louis where a big Episcopal convention was being held, one of the bishops was quoted as saying there was religion in football, and if he is correct the Wildcats must be also about the most pious group of young men in Kansas. Certain it is they can play the game of football."

MANHATTAN RAISES \$600 FOR ARMENIAN-SYRIAN RELIEF

Goodly Sum Is Obtained Through Efforts in College and Town

Approximately \$600 will be the net result of the Armenian and Syrian relief campaign carried on in Manhattan on the days appointed by President Wilson for the purpose.

Civic bodies, churches, and other organizations contributed, as did many individuals. The Young Women's Christian association realized a substantial fund for the purpose by a tag day on the college campus.

Much of the interest here was aroused through the efforts of B. K. Baghdigian, who is about to receive his degree in industrial journalism from the college. Mr. Baghdigian is a native of Armenia. He is now engaged in lecturing on subjects connected with his country and people.

LIGHTNING HITS 'EM ALL

NO KINDS OF TREES ARE IMMUNE FROM DESTRUCTION

All Equally Susceptible, Ancient Superstitions to the Contrary, Points Out State Forester—What Statistics and Experiments Show

No particular species of tree is more susceptible to lightning stroke than any other except in so far as the species determines the height of the tree, according to C. A. Scott, Kansas state forester.

From early times, pointed out Mr. Scott, there has been a belief that certain trees more than others are likely to be struck. The leaves of the laurel or bay tree were worn by ancient peoples both as a symbol of victory and as a protection from lightning of the gods. In some parts of the United States the aspen is considered immune, in others the beech. An old proverb gives this warning: "Avoid the oak, flee from the spruce, but seek the beech."

OLD THEORIES ARE MANY

These popular beliefs have given rise to the following theories: tall trees and trees growing on high ground are supposed to attract electricity, because they are near to the storm cloud region; trees with pointed crowns or leaves, or those having dead branches, because static electricity jumps most easily to and from pointed terminals; trees with smooth or shiny leaves, because a smooth surface invites flashes; trees on damp soil, or deeply rooted, or those rich in starch and sugars, because they are good conductors; trees with deeply grooved bark and those whose tissues are composed mostly of longitudinally arranged fibers, because the path offered by such trees would have little resistance, and would guide the current to the ground. Isolated trees are believed to be particularly susceptible because they are the only marks for the flash.

SUPERSTITIONS DON'T AGREE

"In a comparison of these theories," said Mr. Scott, "some conflicts may be noted. Trees on high ground are not likely to be in damp soils, and those on low, damp ground are not usually deep rooted. Statistics show, moreover, that cottonwood, although a moisture loving tree, having a superficial root system, is the tree most often struck in Europe. Oak, ranking second in the list, is very poor in starch and has a comparatively low, rounded crown."

"In the United States the forest service has gathered data on the national forest. These show that the greatest number struck in any locality are of the dominant species. The trees most likely to be struck in Kansas are the poplar, the hackberry, and the elm."

Laboratory experiments have proved that electric conductivity depends upon the water content of the wood. When absolutely dry it shows no effect but when moistened the wood becomes a conductor. The heavy rain that usually accompanies a thunderstorm will make any tree an excellent conductor, so that any tree is likely to be struck by lightning.

FARM AND HOME WEEK TO BE BIG ATTRACTION

Event Will Be Held at Agricultural College February 5 to 10 Instead of in Christmas Holidays

Preliminary announcement of the annual Farm and Home week, which will be held at the Kansas State Agricultural college February 5 to 10 instead of in the Christmas holiday period, indicates that the program will be unusually strong. Between 2,000 and 2,500 persons are expected to attend—men, women, and children.

Features of interest are being arranged for every member of the

family. Music furnished by the department of music, the college band, orchestra, and glee club, will be added attractions not available in vacation time.

Classes in agriculture will include study of soils, crops, live stock, dairying, cream station operation, poultry production, diseases of animals, fruit growing, gardening, crop judging, and live stock judging. There will be separate classes for men and boys.

Classes in engineering and mechanics, including gas and steam engines, farm architecture, and lighting systems, are expected to be well attended.

Of particular interest to the women will be the classes in home economics, home decoration, color and design, household administration, and child welfare.

Special conferences of institute officers and breeders' associations will be scheduled. A sale of purebred percheron horses is being arranged.

A rural life conference will be held from January 29 to February 10 which will be of special interest to ministers, teachers, and officers of organizations of farmers.

Other features will be the eleventh annual exhibition of corn, sorghums, and other grains, special exhibits for boys and girls in connection with which \$600 will be given in premiums, and the state apple show.

School superintendents in many counties have already signified their willingness to credit boys and girls who attend Farm and Home week with perfect attendance at school.

OYSTER SHELL IS VALUABLE IN PRODUCTION OF EGGS

It Is Not Fed to Poultry for Purpose of Supplying Grit

Oyster shell is fed to chickens for the production of egg shells and not for grit as some persons think, according to R. M. Sherwood, acting head of the department of poultry husbandry in the Kansas State Agricultural college.

Approximately 90 per cent of the oyster shell fed laying hens is converted into egg shell, which has a chemical composition almost identical with that of the original shell. Clam shells and lime, although of practically the same composition, are not as appetizing to the chickens and so are not as valuable as the oyster shells.

EMMERT WARNS FARMERS TO DESTROY DODDER IN ALFALFA

McPherson County Bureau Sends Out Interesting News Letter to Members

Many county farm bureaus in Kansas are sending out printed news letters to their members. One of the interesting publications of this kind is prepared by V. M. Emmert of McPherson county.

In his current issue he devotes special attention to dodder in alfalfa. He says:

"Since the production of alfalfa seed has become so important, it would be well to make a little study of dodder, which is the worst impurity of alfalfa seed. This weed has not been and probably will not become a serious pest in alfalfa in Kansas, but eastern dealers who buy most of our surplus seed refuse to take alfalfa seed containing dodder, so we must be careful not to produce any."

"Dodder grows from seed and twines around the alfalfa plants. After it becomes established on the plants it draws its nourishment from the alfalfa by means of suckers, and its own root dies. Patches of dodder may be distinguished in the field by their yellowish color. They should be destroyed before seed is produced. This may be done by cutting them out, or they may be burned either with straw or after spraying with kerosene."

TO USE METRIC SYSTEM

AMERICAN MANUFACTURERS WILL EMPLOY EUROPEAN UNITS

Plan Has Already Been Adopted to Some Extent Because of Demand for Machinery and Tools by Foreign Countries, Says Professor Carlson

The familiarity on the part of American draftsmen and mechanics with European systems of measurements will be one of the beneficial results of the European war, is the assertion of W. W. Carlson, superintendent of shops in the Kansas State Agricultural college.

"The American, in all his industrial and commercial transactions," said Professor Carlson, "has become so accustomed to the use of yards, feet, and inches, that he has felt himself incapable of thinking or working in any other sphere. The huge profits to be made from the manufacture of supplies for the warring nations have been sufficient to overcome his prejudice, and today in hundreds of factories in the United States thousands of workmen are measuring in metric units just as accurately and more efficiently than with the cumbersome English system formerly used."

MUCH WORK FOR EUROPE

"It may be thought by some that only ammunition is being made for the European countries, but that is a mistake, as many of the large orders are for locomotives, automobiles, trucks, lathes, milling machines, boring mills, and tools of all descriptions, as well as all kinds of fabricated steel work, such as cranes, structural steel, rails, shafting, and pipe."

"The specifications and drawings for these articles are made in the metric system. The drawings can be worked over and changed to English units, but such a change would involve considerable expense, and in the end would be a source of aggravation as will be corroborated by one large manufacturer of locomotives who tried to change the metric measurements to the English. After partly completing the change, this large builder found it advisable to educate his workmen to the French system rather than to translate the plans."

The ease with which American workmen have accustomed themselves to the use of foreign standards is remarkable, in the opinion of Professor Carlson.

OTHER SYSTEMS ARE BARRED

"One of the opportunities open to the United States is to gain a hold upon the business of South American countries," he said. "South American business was transacted largely with Europe previous to the war, and now is temporarily abandoned because of Europe's warring activities. The importance of a serious consideration of the use of the metric system is manifest in this connection, as many of the South American countries will not allow goods to pass their custom houses unless marked in that system."

"The United States must supply the people of South America with goods so much superior to anything they have been receiving that when the war ends this country will get its full share of business in competition with the European countries."

That considerable confusion, and possibly loss, would result at first through the general adoption in this country of the metric system, but that the ultimate gain would more than offset the loss, is the belief of Professor Carlson.

Not more but better farmers are needed, pointed out R. O. Smith, county agent in Wilson county, in a news-letter to farm bureau members. Wilson county has suffered as a result of continuous cropping, he stated. More and better stock should be raised on every farm.

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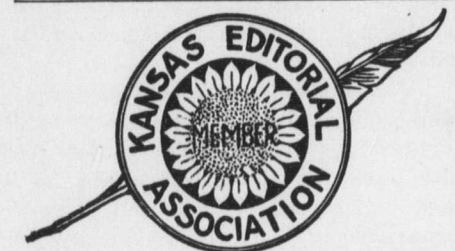
H. J. WATERS, PRESIDENT.....Editor-in-Chief
N. A. CRAWFORD.....Managing Editor
J. D. WATERS.....Local Editor
ADA RICE, '95, M. S. '12.....Alumni Editor

Except for contributions from officers of the college and members of the faculty, the articles in THE KANSAS INDUSTRIALIST are written by students in the department of industrial journalism. The mechanical work is done by the department of printing. Of these departments Prof. N. A. Crawford is head.

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WEDNESDAY, NOVEMBER 8, 1916

THE PUBLIC LANDS

It will doubtless surprise most people to learn that the United States still has more than a quarter of a billion acres of land unappropriated. This is exclusively in western and southern states, 25 in number. More than one-fifth of the total is in Nevada. Kansas is listed with 56,018 acres.

Most of the land unappropriated, of course, requires irrigation, drainage, or some other special treatment or else is suitable only for grazing. The public lands do afford certain opportunities, however, for the practical farm worker with some capital, common sense, and willingness to do hard, exacting labor in the expectation of future profit.

AGRICULTURE AND THE WAR

A renewed interest in agriculture will be one of the results of the war.

Already the first step in this direction is noted. The government of France has established a bounty of a certain sum per bushel on all the wheat grown in the coming season. It has also established a number of provincial experiment stations which will investigate and report on the agricultural methods and practices best adapted to the regions in which they are situated.

Other countries will follow suit. The war has taught the lesson that economic success is requisite to the attainment of success in war or in other activities. While it is to be hoped that countries will not in the future build up their economic resources for the purpose of waging war, it is certain that conditions in the present struggle will be the cause of a greater effort toward economic prosperity. In this effort agriculture is bound to occupy a leading place.

A NEW EDUCATIONAL PLAN

The United States department of interior has presented an interesting plan for practical education in the rural schools. Instead of being given as merely a course, each year following definitely upon the preceding, it is a four year rotation, and the teacher might conceivably begin with any one of the years.

There are a crop year, a mechanical year, an animal year, and a planning and soils year. In the first of these, some of the subjects are corn, oats, alfalfa, potatoes, vegetables, weeds; in the second, rope tying, silos, fire extinguishers; in the third, poultry, pigs, dairying, insects, birds; in the fourth, soils, diversification, marketing, fertility. In each there are subjects—such as sewing, cooking, and canning—especially adapted for girls.

The specific advantage which this arrangement seems to show is in reducing the number of classes—always a desirable thing to do—in the rural school. Under the ordinary plan of

instruction, if four years of agriculture were offered, four separate classes in the subject would have to be constantly maintained. Under the new plan, there need be but one class. Pupils can start at the beginning of any one of the four years.

FROZEN FISH LIVE

The feat of freezing live fish and reviving them several weeks later has been achieved by the Swiss scientist M. Pictet. The scientist put 28 live fish in a box that contained water rich in oxygen, in which several pieces of ice floated. The temperature of the water was then reduced slowly until it froze. At the end of about two months the cake was gradually thawed, and the fish, it is said, were found alive. In such an experiment, the scientist reports, it is essential that the water be gradually frozen and that it shall have contained pieces of ice for from 15 to 18 hours before the whole mass is frozen. The process of thawing must also be slow. Through this process it is believed that Siberian sturgeon and Alaskan salmon can be exported alive to distant markets.—Los Angeles Times.

LEGAL ORATORY

At the conclusion of the hearing in the case of the Amalgamated Properties of Rhodesia (Limited) against the Globe and Phoenix Gold Mining Company (Limited), Mr. Upjohn, K. C., concluded his speech for the defendants, having addressed the court for 45 days, the hearing having occupied 144 days in all. He said he was not sure whether he ought not to apologize for the length of time he had occupied, but he felt that he could not blame himself. He had more than 50,000 questions and answers to go through, 5,000 pages of printed evidence, and 256 exhibits. In reading, noting, and synthesizing the case for the purpose of placing it before the court he had occupied 84 days, not to speak of the work done by the other counsel for the defendants.

Justice Eve said Mr. Upjohn's great speech was bound to provoke a great deal of criticism because of its length. But, having listened to every word of that speech, he was well qualified to offer an opinion upon it, and he wished to express his appreciation of it as an example of unwearying industry.—The London Times.

CO-OPERATIVE STORES

The more general, underlying conditions which investigations indicated should be present if a co-operative store is to be successful are: (1) good leadership among the members and prospective members, (2) capable management, (3) favorable environment, with regard both to physical location and to social or occupational affiliations, and (4) adequate legal safeguards. The leadership should not be confined to one individual, the severing of whose connection with the enterprise might prove disastrous, but should consist in an efficient organization in which a group of leaders takes part. Only a man of good general business ability should be placed in active management of the store. The securing of such a man will involve the payment of a higher salary than is paid by most of the stores investigated. The average salary of the manager for the enterprises reporting was \$106 a month.

In some of the most successful co-operative stores investigated the common employment of many of the residents of the community or their common membership in social, fraternal, or religious associations was an important factor making for success. Laws granting special privileges and creating special safeguards for co-operative associations now exist in 30 states.—United States Department of Agriculture.

WHEAT FROM AUSTRALIA

The announcement from San Francisco that importations of wheat from Australia had been undertaken by a California grain firm adds another new

feature to the extraordinary world situation in grain, due to crop shortage and the European war. As Great Britain seems to have almost insurmountable difficulty in moving wheat over the 15,000-mile route from the antipodes commonwealth, and prefers to secure breadstuffs in North America in quicker time, perhaps there is here a solution of a hard problem by shipping Australian wheat to the United States to replace grain taken from this country by Europe.

There is almost as much mystery regarding the surplus wheat in Australia as in Russia. Last January the harvest of Australia and New Zealand was estimated at 167,000,000 bushels, following a crop of only 25,000,000 bushels the year before and 103,000,000 bushels in 1914. Since January 1 Australia has exported 45,000,000 bushels. Recently it was estimated by Broom-

body else: Do not get a job that is worth while. It will carry responsibility with it and you will have to do things that other people want done in the way they want it done. Otherwise your job won't last long. Do not get a business of your own. If you do you will have the responsibility of making good at it, and that means that you must work for other people early and late, summer and winter, and carry a smiling face whether you feel like smiling or not. Do not get married, because as sure as you do there will be responsibilities of home-making and home-providing that never will raise their burden from your shoulders for a minute. If you want to be your own boss do not try for one of the professions; there is no place in professional life for a man or woman who seeks to please only themselves. Their offices stand empty and the cobwebs gather

Nations of Road Builders

Louise V. M. Hopkins in the Midland

A CURSORY glance at the road lore of the past brings out the fact that, as a nation, the United States of America is very young indeed. Far in the "dark backward and abysm of time," almost before the dawn of history, Carthage, the great trading nation of the ancient world, was building splendid roads for commercial and military purposes throughout her domain. And history makes mention of three great highways as having extended out from ancient Babylon. Unfortunately the records fail to tell in what directions these roads extended, but fancy instantly pictures one of them as leading eastward toward the older civilizations of Persia and India, another westward toward the turbulent cities of Jerusalem and northern Egypt, and perhaps a third great highway led northward along the Euphrates toward Asia Minor and the Greek settlements on the shores of the Mediterranean. Doubtless the great Babylonian monarch, Nebuchadnezzar, in intervals between attacks of insanity and the building of wonderful hanging gardens, drove his war chariots and led his victorious armies over these royal roads on the business of his empire.

But the greatest road builders of ancient times were the Romans. Three hundred and twelve years before the birth of Christ, Appius Claudius, a Roman senator, began the construction of a military road from Rome to a point not far from the present town of Capua. Later this road was extended to Brundisium. The bones of Appius Claudius have been dust for more than 2,000 years, but the road which bears his name and which he built, the historic Appian Way, is still in existence.

The Appian Way is the earliest permanent piece of road construction of which we have any authentic record. Some of the stones which were laid in place by unknown workmen more than 2,000 years ago may still be seen in the bed of this Roman road. Think of the great ones of the earth whose feet have almost certainly trod the worn surface of these stones: the apostles Peter and Paul, Julius Caesar, Pompey, Michael Angelo, Dante, Charlemagne, Napoleon.

The civilized world was at one time controlled by a network of Roman roads, built with the sole purpose of moving troops and military equipment swiftly from one point of the empire to another. The nations which have ruled the earth have been nations of road builders.

hall, the Liverpool authority, that Australia still has a surplus of 80,000,000 bushels, and that the new crop would afford 80,000,000 bushels more for shipment. Later the combined surplus of old and new crops was placed at 112,000,000 bushels, which seems more probable, in view of the fact that the new crop acreage is figured at 10,800,000 acres, or 17 per cent less than last year. Up to the last few days there was a bright prospect for the next harvest, but now Victoria and New South Wales are complaining as to rust, the season having been wet.

The average production of wheat in Australia and New Zealand for five years has been only 92,000,000 bushels. Average exports for the same period were 40,000,000 bushels of wheat and 1,229,000 barrels of flour.—Daily Drivers Telegram.

BEING ONE'S OWN BOSS

Don't like to be bossed by others, do you? Want to be your own boss? Want to do as you please? Want to have things your own way? You can have them, but here are some things you had better not do if you want to succeed in being independent of every-

across the door. If you really want to be your own boss the way is easy. Do not learn anything useful, do not be anything useful, do not do anything useful. Hire out at the cheapest, poorest kind of work you can find; work when the boss is looking; loaf when he turns his back; quit when you please and without warning. Live on your family; loaf and eat and have a good time. The folks who are their own bosses are the loafers—the ne'er-do-wells of the world; but everybody else, from the chambermaid who does her work faithfully to the president of the greatest corporation in the world is bossed, and bossed in exactly the degree to which they succeed in their job. There is no greater lie circulated in the hearing of young people than that which tells them that when they get far from the parental roof and out in the world doing for themselves that they will be their own boss. Your future, your success or failure, depends on how much or how little of yourself you are willing to give to others in return for what others give to you.—Farm, Stock, and Home.

THESE LITTLE FIRS

Dante Gabriel Rossetti

These little firs today are things
To clasp into a giant's cap,
Or fans to suit his lady's lap.
From many winters many springs
Shall cherish these in strength and sap
Till they be marked upon the map,
A wood for the wind's wanderings.

All seed is in the sower's hands;
And what at first was trained to spread
Its shelter for some single head,—
Yea, even such fellowship of wands,—
May hide the sunset, and the shade
Of its great multitude be laid
Upon the earth and elder sands.

SUNFLOWERS

One-half the world can't understand
how the other half voted the way they did.

Some girls wear black shoes and
sombre hued hats and others are natural
born cut-ups.

You can get a great deal farther by
following a plow than you can by following
a forlorn hope.

Every once in a while somebody
you've always had a good deal of
respect for turns up with a wrist watch on.

What's the use of kicking on the
high cost of living when you can get
twenty cents' worth of steak for a half
dollar?

We never could understand why a
woman would rush into print in the
Lost Relatives column the minute her
worthless husband fails to turn up at
a meal.

AND THEN GET FAT AGAIN

Lucille is on a diet now,
The buxom little sinner;
She'd starve herself for forty days
To grow a few pounds thinner.

THE MOVIE MAN'S LAMENT

It used to be that time and space
Were naught when lovers kissed;
We sipped the honeydew at length,
'Twas little that we missed.

But now they've calipered the kiss;
About ten feet of reel
Is all we get, no matter how
Exuberant we feel.

A QUARTER CENTURY AGO

Items from The Industrialist of November 7, 1891

D. E. Bundy, '89, is occasionally heard from as a successful farmer near Blue Rapids.

Faces long and short show the various political proclivities of students since election. A few students went home to vote.

Mrs. Kedzie attends the meeting of the Woman's Social Science club at Hutchinson this week, as chairman of the committee on natural science.

Miss Maud Sayers, '89, presents a paper before the Woman's Social Science club at Hutchinson this week. The subject is "Hidden Danger in Food."

Professor Olin won new honors as Uncle Reuben, the leading man in "Aunt Dinah's Husking Bee," held in the Eames building last evening by the Congregational society.

Captain and Mrs. Bolton and Miss Bolton visited Fort Riley Thursday evening as guests at the marriage of Miss Bessy Forsythe, daughter of Colonel Forsythe, commanding Seventh cavalry, to Surgeon Bache, U. S. A.

The October number of Insect Life, a periodical issued by the division of entomology, United States department of agriculture, contains an abstract of Professor Popenoe's paper on the recent outbreak of locusts in Colorado.

A letter from Miss Mary Swaney to one of our graduates who thought of securing employment as a teacher in the Argentine Republic says: "The salaries are paid in paper, and \$100 in paper is worth less than \$25 in gold. The financial condition of the republic is growing worse and worse. The good times for American teachers are past."

AMONG THE ALUMNI

J. L. Garlough, '16, is manager of Augusta farm, Urbana, Ohio.

R. T. Kersey, '04, is teaching science in the Garden City high school.

Walter J. Ott, '16, is located on a live stock farm near Greeley, Col.

Homer McNamara, '14, is visiting in Manhattan after two years' work for the bureau of agriculture, Philippine islands.

Miss Faith Earnest, '16, is teaching in the Washington high school. She reports the work interesting and prospects for the year exceptionally bright.

H. M. Bainer, '00, agricultural and industrial agent for the Santa Fé railroad, has transferred his headquarters from Amarillo, Tex., to Topeka.

Joe G. Lill, '09, is captain of infantry in the Colorado National guard, stationed at Douglas, Ariz. Mrs. Lill and daughter Althea are visiting relatives in Kansas and Nebraska.

P. C. Vilander, '11, is superintendent of the city schools at Peabody this year. He is assisted in the high school by George Railsback, '15, and Miss Mary Dunlap, '16. The latter is teaching domestic science and art in the grades as well as in the high school.

A. L. Schell, '09, is teaching science in the Pullman Industrial institute at Pullman, Ill. The school is heavily endowed by the Pullman company, and is well equipped. Mr. Schell is enthusiastic about his work. It is so arranged that he may do graduate work in the University of Chicago.

Three alumni are on the faculty of the Southwest Texas State Normal School at San Marcos, Tex. Miss Grace Berry, '10, has charge of the home economics department; Harry H. Coxen, '15, is in charge of manual training; and Miss Lillian Baker, '14, is instructor in domestic art. Mr. Coxen writes that he met several college men who belong to the national guard and who were on a practice hike from San Antonio to Austin.

BIRTHS

Born, to Mr. and Mrs. Ralph S. Hawkins, '14, of Marysville, on October 25, a son, Everett Lynn.

Born, to Mr. and Mrs. J. W. McCulloch, '12, Manhattan, on October 29, a daughter, Marjorie Mable.

MARRIAGES

ENGLE-COOLEY

Miss Elva Engle and Mr. Ralph Cooley, '12, were married November 1, at the home of the bride's parents in Abilene. They will be at home on a farm near Abilene.

BUMSTEAD-LEADLEY

Miss Marie Etta Bumstead and Mr. Thomas Archibald Leadley, '13, were married on Tuesday, October 24, at the home of the bride's mother, Mrs. Eda May Bumstead, Lincoln, Nebr. Mr. and Mrs. Leadley will be at home in the same city, where Mr. Leadley is associate editor of the Nebraska Farmer.

KIMBLE-WILSON

Miss Venus Kimble, '08, and Mr. Bruce S. Wilson, '08, were married Thursday evening, November 2, at the home of the bride's parents, Mr. and Mrs. F. B. Kimble, in Manhattan. The Rev. J. M. McClelland, pastor of the First Methodist church, officiated. Mr. and Mrs. Wilson will be at home after November 15 at 514 North Manhattan avenue, Manhattan. Mr. Wilson is a member of the faculty in agronomy.

DIRECTORS TO MEET

The board of directors of the Alumni association will hold its first meeting of the school year Saturday afternoon and evening, November 11. The members plan to attend the Missouri-Aggie game in the afternoon.

ALUMNI BANQUET FRIDAY

The Kansas State Agricultural college alumni banquet, which is always a feature of the State Teachers' association, will be held this year on Friday, November 10, at 12 o'clock noon, at the First Baptist church, Topeka. The arrangements are in charge of H. L. Kent, '13.

FOR FARM DEVELOPMENT

J. E. Payne, '87, has just begun his eighth year's work for the Frisco railroad. His headquarters are at Snyder, Okla. Mr. Payne's older son and his daughter entered the college this year.

Mr. Payne has assisted greatly in agricultural development in southwestern Oklahoma through sending to the newspapers and farm journals short articles weekly on important, practical agricultural subjects. An example of his material is the following:

We have been watching some land near Manitou which has grown wheat several years in succession. But, the wheat has been headed so that the straw has been returned to the soil. This land is more mellow now than before wheat was grown upon it.

Some "tight land" is "short" in organic matter, even before the sod is broken.

TO EVERY ALUMNUS

Are you interested in the news of this department? If you are, send a letter, a clipping, or an item whenever you can. THE INDUSTRIALIST cannot keep the alumni well informed without your help.

When we do not head wheat, the straw can be returned to land by using a straw spreader—using it as top dressing on small grain.

Chemists have learned that straw is worth \$3 per ton as fertilizer. The application of straw to wheat, as a top dressing, helps the soil to hold moisture. And it has often improved both the yield and quality.

Feeding straw furnishes a coarse manure which can be used as a top dressing.

Very little value is saved when straw is burned.

Why not consider values when deciding whether to burn, feed, or spread?

FORMER STUDENTS MEET

John Davis, '90, professor of physics and chemistry in the Central State Normal School, Enid, Okla., sends to THE INDUSTRIALIST an interesting clipping from the Oklahoman concerning John W. Shartel, a former student, now of Oklahoma City, and Eli Helmick, likewise an ex-student, who is now an officer in the regular army.

"Mr. Shartel," writes Mr. Davis, "has probably done more than any other man in placing Oklahoma on the map through his work in building up Oklahoma City."

The Oklahoman speaks thus concerning the two men:

The visit of Lieutenant-Colonel Eli Helmick of the inspector-general's department at Fort Sam Houston this week brought about a meeting between two men who kept bachelor's hall at college. It also brought out the story of how John W. Shartel, vice-president of the Oklahoma Railway company, almost became a soldier.

Years ago, Mr. Shartel and Colonel Helmick did "light housekeeping" at the Kansas State Agricultural College at Manhattan. Mr. Shartel was from Chautauqua county, Kansas, and Colonel Helmick from Cherokee county. When B. W. Perkins was elected representative to congress from the southeastern Kansas district, he secured an appointment to West Point for Mr. Shartel.

Mr. Shartel debated long over the matter, but being inclined to the law profession, succeeded in having Colonel Helmick appointed in his stead. Since that time Colonel Helmick has risen high in the military profession and has seen much of the world. He has been stationed at different times in the Philippines, Cuba, and Panama.

It had been 33 years since the two met, until this week.

TO MAKE HOME MODERN

SEWAGE SYSTEM AS WELL AS RUNNING WATER IS IMPORTANT

Civil Engineering Specialist Explains Plans Adapted to Needs of Rural Community—Disposal of Waste Means Much to Health of Citizens

Modern improvements in the country home are essential for the betterment of rural citizenship. The time has come when it is just as important for country houses and barns to be piped for water and connected to well designed sewer systems as for city residences and factories. So says F. F. Frazier, assistant professor of civil engineering in the Kansas State Agricultural college.

"Only a small percentage of country homes are as yet improved with what might be called modern conveniences," said Professor Frazier. "Running water, a sewer system, a heating plant, a lighting system, and some form of mechanical power for doing much of the work about the house, are rarely found in the home of the average farmer."

WHAT ARE REQUIREMENTS?

"Perhaps the most important of these improvements lacking in the country home, is an adequate water supply piped into the house. Immediately following the installation of a water system, however, it is necessary to provide some means for disposing of the used water. In other words, a sewage disposal plant must be provided."

"The essential requirements of a sewer system are first to remove all the sewage to the place of disposal as soon as possible, and second, to dispose of it in a way that will permanently rob it of its power for evil."

SOMETIMES USED FOR IRRIGATION

"The character of the sewage from the country home is somewhat different from that taken into the average city sewer, and because of this fact, it cannot be dealt with in exactly the same manner. House sewage such as would be discharged from the farm home is composed of the water used in the kitchen for cleaning vegetables, dishes, milk pans, and cooking utensils; soapy water from bath tubs and wash basins; the water used in the laundry; and all other ordinary wastes. The discharge, however, is weak in comparison with the strong effluent of the average city sewer."

"One of the older methods of disposing of sewage, and one that has been practiced more or less successfully, is that of using the discharge for irrigation purposes."

ONLY FOR CERTAIN CROPS

"For the most efficient operation of this system the climate should be warm and comparatively dry, and the soil of the character usually found in lower creek beds and river valleys—light and extremely fine. As long as the soil is not overloaded or water-logged, and the sewage is allowed to soak slowly through it, excellent results are generally obtained."

"Crops most successfully grown on land where sewage is used for irrigation purposes are those which will absorb large quantities of moisture. The various kinds of root vegetables, such as beets and turnips, are best adapted to growth under these conditions. Crops like celery, lettuce, onions, radishes, and other plants that are eaten without cooking, should not be grown on land irrigated with sewage."

SEPTIC TANKS ARE COMMON

"Another method for the disposal of farm sewage, and one that is frequently used, is the septic tank method. The process is that of collecting all sewage at a convenient location on the farm property, and allowing it to decompose in such a manner that objectionable fumes and odors will cause no discomfort."

"The septic tank should be placed at least 100 feet from the house whenever possible. Neither the tank nor the sewer line running to it from the house should be closer than 25 feet to any well or spring, and they should be placed so that any leakage must drain from rather than toward the source of the water supply."

HOW TO BUILD SYSTEM

"The sewer from the house to the septic tank should not be smaller than five inch vitrified sewer pipe. The pipe line should be laid as straight as possible, and so as to give a fall of not less than one foot in 80 feet. The joints of the pipe should be well cemented with regular mortar."

"The location of the septic tank having been decided upon, it is necessary to determine the size of the chamber required, and the material out of which it is to be built. The tank may be constructed of either brick or concrete, and should be made as nearly watertight as possible. Whatever construction is used, it is well to make the tank substantial."

SIZE OF TANK IMPORTANT

"The size of the septic chamber depends entirely on the number of persons in the family which it is to serve. It is safe to assume that each individual will use from 20 to 40 gallons of water a day, a large part of which finds its way into the sewer. Since the septic chamber must be large enough to hold from two to three days' average flow, it is evident that the tank must have a capacity of at least 75 gallons of sewage for each member of the house. To accommodate a family of six persons, the septic chamber should hold about 450 gallons, which is equivalent to 60 cubic feet."

"The depth of the chamber should be at least 60 inches, while width and length are governed by the cubical contents required. No general rule can be given for the proportioning of these dimensions."

SHOULD HAVE TWO COMPARTMENTS

"To obtain the best results, it is necessary for the tank to have two compartments, the division being made by a partition extending from the bottom to within six inches of the top of the tank. The inlet pipe from the house should enter the septic chamber near its top and extend downward in such a manner that new discharge entering the chamber will not disturb the position of the older sewage."

"The floor of the septic chamber should be constructed with a slight slope toward the center, where an outlet or drain is established. This is done to provide a method of emptying the septic chamber of the suspended matter which settles during the process of decomposition. It will be necessary to remove this sludge from a successfully operated plant once every two or three years."

HOW THE PLAN OPERATES

"The decomposed matter passes from the septic chamber into the dosing chamber, through a pipe extending beneath the surface of the sewage in the former about one-third of its depth. By this method the upper layers of sludge are not disturbed, and the sewage is drawn from that part of the chamber where the liquefaction is most complete."

"The dosing chamber should have a capacity of an average day's flow. As the fresh sewage flows into the septic chamber, it forces an equal amount into the dosing chamber. When the latter becomes filled, there should be some method for it to be emptied, either automatically or by hand. Thus the contents is allowed to flow from the dosing chamber into the distributing system and to the place of disposal."

WHERE THERE'S NO STREAM

"In the absence of a running stream with a sufficient flow to carry away all decomposed matter, the sub-surface absorption system of purifying the effluent from the dosing chamber, is the most desirable. The distributing system should be made of four or five inch farm tile, laid with open joints. The pipe should be laid from 14 to 20 inches below the surface of the ground, and if possible it is well to surround it with about four inches of clean gravel or sand."

"The total length of the tiling necessary will depend upon the amount of sewage to be disposed of at one time, the character of the soil surrounding the tile and the frequency of the discharge. In general the system should be sufficient, with each pipe being two-

(Concluded on Page Four)

TO IMPORT STOCK PAYS

TENDS IN DIRECTION OF UNIFORMITY THROUGHOUT COUNTRY

South American Country Now Buys Short-horns from United States as Well as England—Fraudulent Pedigrees from Abroad Are Decreasing

Importation of first class breeding animals improves the stock of any country and tends towards uniformity, according to E. N. Wentworth, professor of animal breeding in the Kansas State Agricultural college.

"Uniformity in any breed is obtained by an interchange of animals between different sections of the world," said Professor Wentworth. "Argentina now buys some shorthorns from the United States instead of buying her entire supply from England, so as to keep her improved stock equal to that of this country. The introduction of high class imported animals into any herd brings in fresh traits which will often improve the character of the animals produced."

REGAINS LOST CHARACTERISTICS

"Characteristics which have been lost as a result of a change of location or modified methods of selection will be regained in many cases by the introduction of animals from the original home of the breed. The first Ayrshires that were imported into the United States were fair dairy animals but since selection for high production was not rigidly applied their offspring did not progress so rapidly as other breeds until importation from Ayrshire assumed reasonable proportions. Now the best Ayrshire butter fat record rivals that of the Jersey."

From the advertising standpoint the importation of purebred animals is advantageous, believes Professor Wentworth. People as a rule think of imported animals as superior to home bred stock. This belief is not so strong as it used to be, however, for breeders are coming more and more to consider the actual value of an animal.

Inferior animals were formerly sold for much more than their real worth because they were imported. Such a condition still exists to a limited extent, but at present animals are not bought because of the place of their birth but because of their breeding and individual merit.

DON'T DEPEND ON IMPORTATION

As long as the demand for imported animals was greater than the supply many fraudulent pedigrees were used for animals brought into this country. This trouble with importations was greatest previous to 1910. Inspection of pedigrees of imported animals in some breeds, begun about this time, has reduced this evil greatly.

"If the practice of using imported animals is followed too closely stockmen become too dependent on foreign breeders for their breeding stock," said Professor Wentworth. "One result in this country has been to scatter the individuals of a breed so that in horses, particularly, few constructive breeding establishments have been formed. The best animals are often taken to districts where no purebred animals are available to mate to them. This is a disadvantage from the standpoint of constructive breeding but not from that of the average. Seed stock should not come from average animals, however, but from the best herds, studs, and flocks."

SCARCITY OF SORGHUM SEED IS EXPECTED NEXT SPRING

Western Kansas Farmers Learn to Select Grain in Field

In western Kansas the district agricultural agents have been active in promoting the field selection of sorghum seed this fall.

Many demonstrations in selection have been conducted by P. E. Crabtree whose headquarters are at Scott City. He reports that seed will be scarce in this territory next spring. The seed selection campaign that he was conducting was interrupted by the recent freeze. Demonstrations in the preparation of the seed bed for wheat have not been possible in his district this fall because of the lack of moisture.

LACKS ROOM FOR WORK

COLLEGE SHORT OF FACILITIES FOR AGRICULTURAL INVESTIGATIONS

Board of Administration Calls Attention to Criticism by Federal Government—State Institutions to Co-operate in Meetings on Community Problems

That the Kansas State Agricultural college has been criticised by the federal government for its lack of facilities to carry on properly the work in the chemistry of silage foods, stock foods, and agricultural products, is pointed out in the biennial report of the board of administration. The report will soon be distributed.

"In order to meet this need of the college and to satisfy the federal government," reads the report, "it will be necessary to provide additional room to house the physics department with its expensive equipment. This department is now using a part of the chemistry building and this would relieve the pressure so that chemistry might have its proper place.

KANSAS MUST DO ITS PART

"The war and our more complex civilization indicate that we will have to give a very considerable amount of attention to agricultural chemistry in the future and Kansas must do her part toward solving this problem, not only in her laboratories and by her experiments, but by teaching young men and women who are to investigate these vital problems of the people of Kansas."

Announcement of a community school plan in which the Kansas State Agricultural college, the University of Kansas, and the state normal schools will combine in holding meetings for the discussion of community problems, is made in the report of the board.

MAKING EDUCATIONAL HISTORY

This system of taking the institutions to the people, which is expected to be in operation before the end of the year, will be something new in the educational history of the United States. It will be the result of the happy relations existing among the several state schools and their ambition to do their utmost to serve the state.

The plan as outlined by the board calls for a general community school session in the morning, and sectional discussion of rural, city, and educational problems in the afternoon.

The agricultural college now sends out its movable schools to communities interested in agriculture and kindred subjects, the university sends out its extension schools which deal with city and state problems, and the normal schools hold their extension schools for the improvement of the educational life of communities. Under the new system the educational institutions will get together for the purpose of serving the people of the state.

LOW CREAM TEST MAY BE FARMER'S FAULT

Speed at Which Separator Is Run Affects Result—Dirt Lowers Efficiency of Machine

Kansas farmers whose cream tests show more or less variation should not be too hasty in making accusations against the creamery, for the fault may be their own, says N. E. Olson, instructor in dairy husbandry in the Kansas State Agricultural college.

"Farmers are apt to do creamery men an injustice in believing them dishonest. Factors which they themselves control, may cause cream tests to vary.

"The speed at which the separator is run probably causes the greatest variation in cream tests. If run above normal speed, which is marked on the crank, the result will be a richer cream. If run slower than normal the cream will test lower. Farmers should see the advantage of timing their separators to the speed indicated on the crank. Fat is lost in skim milk if the crank is turned too slowly.

"Milk can be most successfully separated at a temperature of 90 to 100 degrees. This is the temperature of

the milk when it is drawn. If the milk is allowed to cool it becomes viscous and is more difficult to separate. Consequently the cream test is raised.

"A dirty separator lowers the efficiency of the machine and causes cream tests to vary. Steadiness in turning the crank is another factor that influences tests.

"As far as possible the same person should tend to the separation of the milk each day and conditions should always be the same.

"Keep the separator clean, separate the milk each day while it is still warm, maintain an even, normal speed on the separator, and cream tests will vary but little."

COLLEGE GIRLS EARN THEIR WAY BY VARIED EMPLOYMENT

Catering, Office Work, and Caring for Children Bring in Money

A wide range of work is undertaken by ambitious young women in the Kansas State Agricultural college who earn all or part of their college expenses. From serving Milady's pink tea to laundering her frills are the occupations of many students.

Catering is the most pleasant as well as profitable work which presents itself, according to Miss Mildred Inskeep, secretary of the Young Women's Christian association. The girls who do this kind of work find their tasks may vary from decorating a birthday cake to serving at a tea. The girls find the experience valuable, as the suggestions they obtain are put to practical use.

Office work is in demand. Directing envelopes, filing and taking dictation are general types of work done. Folding bulletins and advertisements is another source of employment.

General housework, bed making, caring for children and invalids, and fine sewing are other ways in which the industrious girls earn their college expenses. Calls are received daily by the Y. W. C. A. office from housewives who want help by the day and the hour. College girls who are taking work in domestic science are particularly in demand. The employment bureau finds itself busy throughout the year.

TO MAKE HOME MODERN

(Concluded from Page Three)
thirds full, to receive the entire contents of the dosing chamber.

CESSPOOL SOMETIMES EMPLOYED

"In some cases it may be possible to direct the slopwater from the house into a leaching cesspool without creating a nuisance or endangering the health of a community. This method of sewage disposal has been severely criticised, but when properly installed the cesspool still is used in many cases for isolated country homes.

"The most important point to be taken into consideration in installing a system of this nature is its location in reference to the water supply. The cesspool should be so situated that all seepage will drain in a direction contrary to any well or spring from which water is taken for use in the home. At least 50 feet of ground should separate the source of water supply and the cesspool.

USUALLY BRICK OR STONE

"The cesspool tank is generally built of brick or stone laid without the use of cement mortar. Its shape may be either circular or rectangular, the top being arched over in the manner commonly used in covering cisterns. The pipe line from the house should be laid in the same way as for the septic tank system.

"The same decomposition takes place in the cesspool as in the septic tank, although it is not nearly so complete. For this reason, therefore, it is usually necessary to clean out the tank thoroughly at least once a year or perhaps oftener.

"Every method of sewage disposal requires more or less attention to obtain perfection in its operation. The health of the rural citizen depends largely upon the attention given to the proper disposal of household waste."

KANSAS ROADS IMPROVE

BETTER CONDITIONS NOTICEABLE IN ALL PARTS OF STATE

Direct Supervision of County Engineers Means Much to Construction and Maintenance of Highways—Durable Surfacing Will Soon Be Needed

A marked improvement in Kansas roads is noticeable in all parts of the state and especially in those counties where the road work has been placed under the direct supervision of a county engineer.

"County boards are beginning to realize that their many other duties make it impossible for them to give proper attention to the county roads," said W. S. Gearhart, state highway engineer. "Where the county engineer and county boards work coöperatively much good work is done and it is done more efficiently than could possibly have been done by the board alone. Under this system, now being carried out in a number of the counties, the county board determines what road work shall be done and the county engineer is made directly responsible for carrying out their plans.

RAIN DAMAGES EARTH ROADS

"Sentiment in favor of better roads for Kansas is increasing rapidly because so many persons have had opportunity to observe what other states are doing along this line. The earth roads in this state are the best in the country, but it is hard to keep them in repair, especially in wet seasons. The summer rains of 1915 caused the bottom to drop out of our earth roads and they are just now being brought back to their former condition.

"Roads are being built with the idea of permanency. In many communities temporary makeshifts are no longer tolerated. Cement culverts replace dilapidated bridges and all other road improvement is of a more durable character than formerly.

ONE CAR PER MILE

"Kansas now has an average of one automobile for every mile of road and if the state expects to keep pace with this increasing traffic the main traveled roads, sooner or later, must be surfaced with durable materials. Of all the different kinds of material available for road surfacing gravel probably is the best for Kansas conditions as long as the traffic does not exceed 200 vehicles a day. When the traffic increases beyond this number brick or cement is the best material.

"Gravel deposits are numerous throughout all of that part of Kansas east of a north and south line through Solomon. This fact makes gravel the cheapest surfacing material. Because it is so plentiful and so easily obtained, it is cheap in respect to both first cost and maintenance.

GRAVEL HAS ADVANTAGES

"The value of gravel for road building should be more appreciated in Kansas. A gravel road is easier to repair than one made of crushed stone or other material. It packs down smoother and when a hole or rut works in, it can easily be filled with a shovel or two of fresh gravel. Road builders know that a similar defect in macadam can not be repaired so easily. The road drag can be used on gravel surfaced roads and they can be rounded off in the spring with the ordinary road grader.

"The important thing that most concerns road builders at present is a means of getting money to pay for the improvements. Surfaced roads for Kansas, however, will continue to be a dream until some equitable system of taxation has been worked out. The farmer who lives closest to the road and therefore derives most benefit from it should expect to pay a larger tax than his neighbor who lives five or 10 miles away. A similar system of financing street improvement has proved satisfactory in a great many cities. If it works in towns it should work in the country as well.

"The counties of Leavenworth and Douglas have made application to the highway department of the college to submit plans and specifications for a concrete road through those coun-

ties. This stretch of road is part of the already established Kansas City road to Fort Riley. The survey for the work will begin about November 15."

PAWNEE BUREAU AT WORK ON FARM MANAGEMENT PROBLEMS

R. P. Schnacke, County Agent, Is Busy Making Analyses

The county farm bureau in Pawnee county is one of the newest as well as most active bureaus in the state. This bureau is conducting demonstration work in farm management this fall, and farm analyses are being taken by R. P. Schnacke, county agent. The farmers are coöperating in the work.

FARMERS ASSESS TRACTOR HASN'T DISPLACED HORSE

Replies to Questionnaire Indicate Animal Labor Still Holds High Place

That the tractor has not supplanted the horse in furnishing farm power is shown by answers to a questionnaire mailed to 500 Kansas tractor users by Dr. C. W. McCampbell, associate professor of animal husbandry in the Kansas State Agricultural college.

"Experience of tractor users is a more reliable index to the usefulness of the tractor than theoretical deductions," said Doctor McCampbell. "From the data collected it was found that each of these tractor users was plowing annually an average of 317 acres, and yet he had been able to eliminate only .64 of one horse for each 100 acres plowed. He had found use for his tractor only 36.6 days per year. It was found that 95 per cent of purchasers of tractors had gotten them for the sole purpose of plowing wheat ground.

"From the experiences of these men it would seem that the tractor is a useful and satisfactory piece of farm machinery, but that it must be considered as additional farm equipment. The justification for the use of the tractor lies in the fact that it may under favorable conditions do a special line of work, rather than in the claim, refuted by experience, that the tractor is a satisfactory substitute for horse power.

"The fact that these tractor users are maintaining but eight head of cattle for each 100 acres plowed indicates that they are in the main grain farmers. If the extensive grain farmer is able to eliminate but 1/3 of a horse for each 100 acres plowed, the intensive farmer with his diversified farm will not be able to eliminate any horse power by purchasing a tractor."

DO REPAIRS IN WINTER

FARM MACHINERY SHOULD BE KEPT IN FIRST CLASS CONDITION

Slack Winter Season Is Time to Put Implements into Shape—Improper Work Often Results in Expensive Harvesting, Points Out Professor Wirt

Importance of repairing farm machinery, so that it will be ready for use when needed, is emphasized by F. A. Wirt, assistant professor in charge of the department of farm machinery in the Kansas State Agricultural college.

"Repairs should be made systematically, and at times when work is not rushing," said Mr. Wirt. "In putting a machine away after a season's work, notation should be made of the parts needed, while the operation of the machine is still fresh in mind. These notes may be made on tags and attached to the machine, but a separate list should be kept on file in case any of the tags are lost. If the farmer waits until spring he probably will forget about the repairs needed.

"In the slack winter season the farmer should go to the shop and put every machine into first class condition. This gives the implement dealer time to obtain the parts needed. Ordering by mail lessens the chance of getting the wrong piece. Parts needed cannot always be obtained from the dealer but will have to come from the branch house or factory, and plenty of time should be allowed.

"In the busy season, when a breakage occurs, the farmer repairs it as best he can and goes on using the machine. The work may suffice for the rest of the season but will not last through another year. Such repairs are often the cause of inferior work and make the process of harvesting expensive.

"The farmer does not have time to make repairs in the spring, especially when it is sometimes necessary for his dealer to send to the branch house and the branch house in turn to the factory before spare parts are obtained. Not infrequently a farmer will buy a new machine rather than lose time by waiting for repairs to be made."

The federal land banks will be in operation in January, according to information sent out by the farm loan board, Washington, D. C.

COME HOME TO ALMA MATER

Every Alumnus, Every Former Student, Every Member of the Big Agricultural College Family, is needed to help beat Missouri

MISSOURI TIGERS

VS.

AGGIE WILDCATS

SATURDAY, NOVEMBER 11

Game called at 2:30 o'clock p. m.

Big Pep Meeting Friday Night—Meet Your Old Friends There

SECOND ANNUAL HOME COMING
BE A BOOSTER FOR K. S. A. C.

THE KANSAS INDUSTRIALIST

Volume 43

Kansas State Agricultural College, Manhattan, Wednesday, November 15, 1916

Number 8

MORE TIME IN SCHOOL

VACATION PERIOD IS TOO LONG, SAYS PRESIDENT WATERS

College Executive Points Out How Increase in Academic Year Would Mean Economy and Better Opportunities for Study and Industry

Increase the length of the college year 25 per cent and save interest and depreciation on half a billion dollars worth of equipment, was the recommendation of Dr. Henry Jackson Waters, president of the Kansas State Agricultural college, in an address this afternoon before the American Association of Agricultural Colleges and Experiment Stations in Washington, D. C. President Waters urged that not only the colleges but the high schools and graded schools increase their term to this extent, but held that the colleges must lead the way.

Doctor Waters pointed out that the present division of the year was made when education was intended to fit one to lead a life of leisure, whereas now it is applied to conditions under which the purpose of education is to teach the youth how to work efficiently. Moreover, he declared, in more recent times some students could be in school only at certain periods, duties on the farm, in the workshop, and in the home requiring their attention at other periods. At present, on the contrary, no students, except those who live on farms, can be in college at one time more conveniently than at another.

SEVEN WEEKS ENOUGH VACATION

"Seven weeks is all the vacation anyone needs," said President Waters. "It is much more than the average man gets. It is twice what the busy man in an educational institution obtains."

"Suppose a student in college carries an average assignment of 16 credit hours a week and makes two hours of preparation for each credit hour, which is more studying than the average student does. We then have a total employment on the studies including the time required to recite and to do the laboratory work of 48 hours a week or an average of eight hours a day. Work in literary societies and other student activities may well be assumed to occupy another hour each day, making a total daily employment of nine hours for six days a week. Making allowance for the time lost from studies in securing assignments, taking examinations, and holidays, the academic year of 36 weeks is reduced to 31 or 32 weeks a year. Scarcely more than two-thirds of the calendar year is devoted to study."

BIG INVESTMENT IS IDLE

"Except for the summer school of from six to twelve weeks, which is more or less separate from the rest of the college work, the investment of more than half a billion dollars in buildings and equipment is idle almost a third of the year."

"By far the greatest growth in attendance at the educational institutions of the country within the last decade has been in the summer sessions. These sessions, originally designed for the benefit of teachers who could not attend college during the regular sessions, have been attended by an increasing number of the students of the regular sessions with a view to shortening the length of their residence work or to securing a broader education."

"More and more the course of study in the summer sessions is designed for the regular student instead of the teachers, although the interest of the teacher is by no means being neglected."

STUDENTS COME IN SUMMER

"The attendance of regular students at the summer session is largely voluntary and is composed principally of those who realize the waste of the long

interim between the regular sessions of the college. It is therefore a clear indication that the customary vacation is longer than is required and that a great many college students are glad to avail themselves of the opportunity to use a considerable part of their vacation time in study and in work."

"Unfortunately the students who attend the summer session are those who least need this opportunity to keep themselves busy. They are for the most part persons who would be at work at something else if they were not going to summer school."

LITTLE TIME AT STUDY

"It is the great body of young men and women whose parents are in comfortable circumstances, and who spend the summer in idleness, to whom a plan of compulsory study for 45 or 46 weeks in the year would be a really great service."

Doctor Waters pointed out also the great loss of time in the elementary grades and the high schools, where at present pupils average only 7,000 hours in school out of the 184,000 hours of their life during the school attendance.

The permanent value of the longer school and college year as a preparation for life was emphasized by the speaker, who showed the effort made to increase the content of the courses. In professional studies, such as law and medicine, the courses, he pointed out, were being lengthened to six years or more. He urged the longer term as a more adequate and satisfactory means of increasing the course content.

EFFICIENCY LOWEST IN WINTER

"When the student is required to work more nearly the year round," commented President Waters, "he not only will be able to cover a much more extensive course of study, but also will be trained in habits of industry instead of loafing and laziness."

The objection to summer study in warm climates was effectively answered by Doctor Waters, who showed from the results of tests that mental efficiency was not impaired by summer weather, but was instead on the rise in this period, reaching its highest point in October or early November. The time of lowest mental activity, he demonstrated, was found in midwinter, the approximate time of semester examinations in most schools and colleges.

YOUNG PIGS ARE INJURED BY EATING TOO MUCH FEED

Should Receive Small Quantities at Frequent Intervals, Says Gatewood

More pigs are ruined at weaning time than at any other stage of their existence, asserts Ray Gatewood, instructor in animal husbandry in the Kansas State Agricultural college.

"Pigs should have access to corn and other grains when they are with their mother, so that when they are weaned they will know how to eat and will not miss the milk of their mother," said Mr. Gatewood.

"Skim milk or buttermilk is desirable feed for pigs at weaning time. The milk should be fed in the same condition at all times—either sweet or sour—otherwise digestive disorders are likely to be caused. The feeding trough should be kept clean."

"Care should be taken that the pigs are not overfed. Overfeeding causes feverish conditions of the pigs and will stunt their growth. One of the greatest secrets of success in the rearing of weanling pigs is the frequent feeding of small quantities of food. The stomachs of the pigs are not capable of storing a large amount of food at any one time."

"Usually the pigs are large and thrifty enough to wean at the age of six to eight weeks. They should have access to green forage, such as alfalfa, rape, clover, or sorghum, at all times."

DOES NOT POISON SOIL

SORGHUM PLANT HAS NO TOXIC EFFECT, BELIEVES AGRONOMIST

Experiments Fail to Confirm Long Cherished Opinion—Use of Moisture Is Apparently Cause of Injury to Succeeding Crops

That the growing of sorghums, contrary to a common belief, leaves no poisonous or toxic substances in the soil, is the belief of R. I. Throckmorton, associate professor of agronomy in the Kansas State Agricultural college.

"In the past," said Mr. Throckmorton, "it has been generally believed that the growing of sorghums, especially kafir, left poisonous, or toxic, substances in the soil, which were injurious to following crops. Recent experiments, however, have failed to show the presence of any such substances."

GROW IN DRIEST TIME

"It is now thought that the particular manner of growth of these offending sorghums is the cause of the injury to the succeeding crops. The sorghums, which include the kafirs, are planted as a rule in June as a forage crop. Thus they make their growth during the summer and early fall. This usually is the driest part of the year. The sorghum will withstand a protracted drouth, starting a vigorous growth as soon as the moisture comes, whereas the ordinary plant would be so weakened that it would take only a small amount of moisture, if any at all. If there is but little moisture present, the plant is so constituted that it will make a limited growth and live. If, on the other hand, a large amount of moisture is present, the plant is capable of using large quantities. The root system is large and fibrous, fitting the plant for taking large quantities of moisture from the soil."

USE MUCH PLANT FOOD

The sorghums are also heavy users of plant food, pointed out Professor Throckmorton. This is especially important when one considers that the nitrates are essential to the growth of the young plant of the succeeding crop.

The sorghum is cut at the time of, or just before, the first frost. Winter weather soon follows. There is little rainfall during the average fall and winter. The absence of heat and moisture allows of very small amounts of plant food being made available. Fall crops planted on sorghum fields will as a consequence be sickly and weak.

TO GUARD AGAINST DAMAGE

While sorghums do not use more plant food and moisture in their growth than corn, they take it at a time of year when little more can be made available before the return of warm weather and spring rains.

With these facts in mind it would not be advisable to follow sorghums with a fall crop such as wheat. Some relatively late planted crop had best be chosen to follow sorghum. Corn or some other intertilled crop that is not planted too early would be best. This allows for spring rains, warmth, and sunshine to get in their work, before the new crop needs the plant food and moisture. If some method is pursued such as the one cited, there should be little ill effect because of the preceding sorghum crop.

NOW DUCK TAKES LESSON FROM ADVERTISING HEN

Indian Runner Has Gained Popularity from Effective Publicity, Asserts Poultry Specialist

According to popular belief, fostered by a well known farce, the laying hen is a perpetual example of the motto, "It pays to advertise." But

now comes the duck advertising, at least by proxy.

The Indian runner duck owes its popularity largely to the numerous articles written by the various duck breeders over the country, and not to its own individual qualities, in the opinion of R. M. Sherwood, acting head of the department of poultry husbandry in the Kansas State Agricultural college.

"An enormous amount of food is consumed by the duck, as a rule, in comparison with the hen," said Mr. Sherwood. "It is on a par with the hen as to maximum yearly production, and is only slightly subject to disease and parasites."

"The duck must be closely watched during the laying season, however, as it is likely to lay eggs anywhere the notion strikes it. Its best laying season is the fall and winter. The duck is noted for laying under adverse conditions, and relieves the farmer of much trouble in caring for it."

"The meat is good, and if the duck has been properly fed and prepared, is very palatable. The regular market price is from 9 to 11 cents, but during Thanksgiving and Christmas seasons, the price is likely to go as high as 13 to 14 cents. The low price is due to the packer's difficulty in handling the duck, because of its peculiar shape."

MURIATIC ACID SOLUTION TO REMOVE RUST STAINS

Porches Often Become Badly Discolored from the Wire Screening

Unsightly rust stains on weatherboarding can be removed easily, according to P. J. Newman, assistant professor of chemistry in the Kansas State Agricultural college.

"With an increased number of screened sleeping porches, there is a heavy demand for an effective remover for rust stains," said Mr. Newman. Mix one part of muriatic acid with five parts of water. Wash the stained walls with the solution, and rinse them with pure water. The solution may also be used for cleaning stained brick or stone work. Care should be taken not to allow this remover to get on the clothing. In case it does, sponge the spot with water."

FARMERS MAKE AUTOMOBILE TOUR TO STUDY PIT SILOS

W. A. Boys Conducts Demonstration Trip in West Central Kansas

A demonstration tour for the study of silos was conducted near Oakley by W. A. Boys, agricultural agent for west central Kansas. Seven automobiles and 15 persons were in the party. Five pit silos north of Oakley were visited in the forenoon and a basket dinner was served at Oakley at noon. In the afternoon five more silos south of town were visited.

The popularity of the pit silo is shown by the fact that only one of the ten silos visited was above ground. All the silos that had been carefully constructed were in as good condition as when first built.

At every point attention was called to the small amount of waste of feed. Several of the silos contained silage two and three years old, showing the value of the silo as an insurance of feed in short crop years and in saving feed that otherwise might be wasted in good crop years.

In the evening a meeting was held in one of the moving picture theaters at Oakley. Charles R. Weeks, superintendent of the Fort Hays Branch Experiment station, spoke.

The formation of ice on the surface of fields is fatal to alfalfa. This condition is most apt to occur on fields that are level or that contain pockets. —United States Department of Agriculture.

TO NAME NEW WHEAT

AGRONOMY DEPARTMENT ASKS SUGGESTIONS ON VALUABLE STRAIN

Variety Developed by Experiment Station Shows 15 Per Cent Increase Over What Is Ordinarily Grown—To Be Distributed in State

Wanted—a name for a new strain of wheat.

The department of agronomy of the Kansas Agricultural Experiment station has developed a strain which has proved much better than the ordinary varieties grown in the hard wheat districts of the state. This variety, yet unnamed, bears the station number, P-762. It is a Turkey type of wheat, produced by head selection from the Crimean variety.

In tests in comparison with the pure improved Turkey wheat since 1911, it has shown a 15 per cent increase in yield over the latter. The average yield for P-762 for the six years was 30.7 bushels as compared with 26.5 bushels for the Turkey. In the extremely unfavorable season of 1912, when wheat winterkilled severely, it produced 48 per cent more than the Turkey, and in 1916, when there was also considerable winterkilling, it out-yielded the Turkey more than 49 per cent.

SEVERAL TITLES ARE MENTIONED

Among names suggested for the variety are Kansas Aggie, Kansas Number 7, K. S. A. C. Number 7, Paragon, Riley, Czar, Alexis, Kanred (Kansas Red), Imperial, Clarion, Selected Crimean, Pedigree Crimean, and Kansas Crimean. L. E. Call, professor of agronomy, has sent out letters to many farmers who have been cooperating with the college, asking their suggestions as to name.

This improved variety appears, from all observations, to be harder than the common strains of Turkey wheat. It therefore winterkills less and produces correspondingly greater yields in seasons when there has been considerable winterkilling. The young plants of this variety apparently have a more extensive root system and the wheat ripens from three to five days earlier than the ordinary Turkey wheat.

YIELDS HIGH ON FARMS

In 1914 and in each season since that time this variety has been planted on the farms of a number of farmers in the western three-fourths of Kansas—the hard wheat district—where the variety has been grown in comparison with the local wheat that the farmers were growing on their own farms.

In 1914, with 10 tests, P-762 yielded 28.9 bushels as against 26.4 for the local varieties. Twenty tests in 1915 showed a yield of 25.2 bushels for P-762 as compared with 21.6 given by the local varieties. In 1916 the acre yield of P-762 was 26.3, that of the local varieties 20.4. The average increase of the new strain of wheat over the local varieties was therefore 4.1 bushels to the acre.

In most cases the local variety was Kharkof or Turkey that had been secured in the past years from the experiment station and was therefore better than much of the wheat planted in the state.

MEANS MUCH TO KANSAS

If this variety had been planted on all the farms in the hard wheat belt of Kansas in the past three years and had produced the same increase obtained on the 29 farms on which comparisons were made, the total gain in yield for the state would have been 51,527,000 bushels. The value of this, on the basis of prices at Kansas City for the three years, would have been \$62,845,000.

The experiment station, concluding from the tests that the variety is of outstanding merit, feels that it should

(Concluded on Page Three)

THE KANSAS INDUSTRIALIST

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J. D. WALTERS.....Local Editor
ADA RICE, '35, M. S. '12.....Alumni Editor

Except for contributions from officers of the college and members of the faculty, the articles in THE KANSAS INDUSTRIALIST are written by students in the department of industrial journalism. The mechanical work is done by the department of printing. Of these departments Prof. N. A. Crawford is head.

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WEDNESDAY, NOVEMBER 15, 1916

NOW FOR VACATION

Summer isn't the only time for a vacation. Because vacations originated in the cities, where business is usually dullest in summer, people have got the idea that a winter vacation is something extraordinary.

In the east, however, the winter vacation has become a commonplace. Last winter, it is estimated, 750,000 farmers and their wives spent winter vacations in New York alone.

In the west the winter vacation has not grown so popular, though winter is, here as in the Atlantic states, a period of comparative idleness on the farm. It is a chance for a vacation—for a visit to one of the stock shows, for some work in an agricultural college, or for merely a pleasure trip to some big city. The farmer and his wife are entitled to a vacation as much as any one else.

WHAT ADVERTISING WILL PAY?

Sir Joseph Beecham of England, recently deceased, rose from a farmer's boy to become a knight and a baronet and the third richest man in the kingdom, by manufacturing pills and by energetically advertising them.

Sir Joseph showed it pays to advertise—and showed it at a time when few had believed it. Thus he performed a useful service.

Sir Joseph's kind of advertising, however, does not pay what it uses to pay, and will pay less as time goes on. There is less and less public confidence in patent pills and similar articles. More and more the advertisers of them are being driven from the columns of newspapers to the less valuable advertising mediums.

The kind of advertising that will pay in the future will be the kind that presents a product which can be guaranteed by the advertiser, which is worth what the buyer pays for it. Advertising of this sort will perform a real and definite function in distribution.

TRAINING FOR LIFE

The art exhibit being made under the auspices of the home art department is important not only for its own sake but for the sake of the tendency that it represents. It stands for the tendency to well rounded education—an education that takes into account both making a living and making life.

Criticism directed toward vocational education has been due largely to the belief that vocational education aimed exclusively at enabling the students to make a living, that it was based on the theory that economic values are the only values.

All properly administered vocational institutions are getting away from this idea. They realize that they must still give students the training that will enable them to earn a livelihood, but

they realize at the same time that this, taken alone, will mean intense selfishness and will tend more and more to widen chasms between social and economic classes. They realize that students must be taught to live lives of service to their communities, and are translating that realization into action.

STUDENTS ARE RELIABLE

Testimony to the truth of the statement that Harvard students are as a rule reliable in the matter of payment of bills is given in the report of the Coöperative society. "The society loses very little through uncollectible accounts," runs the report, "in spite of the fact that by far the larger part of its sales are on credit. During the past year, in a total business of \$445,000, the entire amount written off the books as uncollectible was \$212.23."—Boston Transcript.

A HIGHWAY SYSTEM

What we need and in time will have is a system of highways which will ramify from the largest cities to the doorway of the humblest citizen—villager or farmer. Such a system of highways will include trunklines with expensive concrete or brick surfaces for the very heavy traffic, including trucks and automobiles. Less used but important roads may be of water-bound macadam or gravel. Perhaps in certain regions where stone and gravel are not at hand oiled roads may prove most economical and practical. Minor wagon ways must remain of native soil, built and maintained with the road drag. Meanwhile antagonism to road dragging breeds in a lack of information or a narrowness which fails to comprehend the facts.—D. Ward King.

MAGIC AT \$3 A PINT

On the editorial desk stands a pint bottle of liquid which an Illinois farmer paid \$3 for recently, with the idea of giving it to his hogs to cure what ailed them. The hogs died, leaving a surplus of the magic remedy on his hands, and he made the editor a present of one bottle of it.

Perhaps folks grow tired of hearing homilies, yet here is an example so pointed that some comment seems necessary. Here was a smooth-tongued, gentlemanly-acting man who was able to sell, to progressive, intelligent farmers, from \$30 to \$100 worth each of a worthless dope, much less effective than the local druggist could have compounded at a fraction of the cost. Any reader of Orange Judd Farmer has seen in these pages numerous times, reliable prescriptions for worms and for other such hog troubles as can be readily treated with medicine. These are not expensive remedies, nor is there anything mysterious about them.

The local veterinarian, in any case, is the man to appeal to in case of serious live stock trouble. He is a permanent fixture, and he has a reputation to sustain. His living and his future depend on his making good and being honest. Put the case up to him, and the chances are far better for saving the hogs than if some wandering faker with a big talk administers some fancy remedy and disappears with the money. Deal with people you know, or else buy from advertisers who are guaranteed.—Orange Judd Farmer.

HOW HORSES SLEEP

Horses, when turned out to pasture, are more prone to take their rest lying down than when confined in stable stalls, but even when practically free from human restraint and observation, or any likelihood of danger, they seldom take more than an hour each night in the recumbent position, and that period is generally indulged in at about midnight.

A noted veterinarian says: "There are some curious facts regarding the disposition of horses in the matter of lying down. To a hard-working horse repose is almost as much of a necessity as food and water, but tired as he

may be he is an animal very shy about lying down. I have known instances where stablemen declared that horses in their charge had never been known to take a rest in that manner, but always slept standing. In some of these instances the animals were constantly under human watchfulness night and day, and in other cases the conclusions were arrived at because no marks of the bedding were ever found upon their coats. I now recall an instance of a horse that stood in a stall near the entrance of a livery stable. No one ever saw that animal lying down within a period of 15 years, and he finally died standing."

It is a theory—only vague supposition—that a horse sleeps standing because he fears that insects or mice may creep up his nostrils. It is also known that the elephant has the same

general cooking, sewing, and the care of the home are taken up later.

The work with the women in the south has developed from the work with the girls, and the activities of both also naturally have broadened to include community interests as well as those of the home. Since the women of the country are producers, they have taken most interest in the assistance which the women agents may give them in taking up or developing income-producing work. Gardening, canning, dairying, and poultry raising, therefore, have been among the most popular lines of work in many communities.

Factors of importance in the home economics work in the north and west are, in addition to the ordinary work of the specialists of the state colleges, such special features as automobile home makers' excursions in which

From Persia to Kansas

Dr. Henry Jackson Waters in "Alfalfa in Kansas"

IT'S a long way from Persia to Kansas, nearly half way around the world, even as the crow flies. Yet this is the distance alfalfa traveled from Persia, the place of its birth, to Kansas, the place of its most effectual fruition. It's a long time from 500 B. C. to 1869 A. D. Yet this is the time that elapsed from the date of the earliest extant record of alfalfa to the date of the plant's first entrance into Kansas.

It was in the land of Media, a well-watered, fertile, and wealthy country in what is now northern Persia, that alfalfa had its ancient home. The first word of the botanical name of the plant, *Medicago sativa*, is a reminiscence of the ancient land of the Medes, of whom we read so much in the Old Testament Scriptures and secular history. The word *sativa* means cultivated. In England, where words last longer than in the United States, the name "purple medic," suggesting both the origin and the color of the flower of the plant, is commonly applied to alfalfa.

Alfalfa played in its travels the part of the leisurely tourist, who travels about the world, stopping now here, now there, as his health or fancy may suggest. Alfalfa zigzagged across Asia to Europe, into Africa, then back to Europe again, and up and down and across North and South America. It tarried for centuries in some countries, such as Greece and Spain, before proceeding again on its way. Occasionally it lost ground by venturing into a region of unfriendly soil and climate, such as New York, or into a country, such as Mexico, where the people did not know how to treat it. Sometimes the seed was carried by men, at other times by birds, while in other cases the way it made its journey is unknown.

* * * * *

Alfalfa finally reached Kansas, where it found the conditions more suitable, perhaps, than in any other land it had visited in its more than twenty centuries of wandering. Indeed, so successful has the plant been grown in this state that many persons who have not read history carefully have not unnaturally drawn the inference that alfalfa originated in Kansas.

horror of mice and that a small rodent can cause more consternation among a herd of those colossal animals than a tiger or boa constrictor. A mouse in the hay at a circus will cause every elephant in the collection to hold his trunk aloft, plainly indicating that they fear the little creature may take refuge in the proboscis orifice.

But to return to horses. It has always been said that they "sleep with one eye open," and are constantly on guard. An Indian shod in cotton felt moccasins, practicing all the sly arts, could not, with the wind in his favor, approach a sleeping horse without being detected.—Inland Farmer.

HOME ECONOMICS WORK

Approximately 60,000 girls and 30,000 women are now being reached by federal and state home economics work in the southern states through 462 agents. The work began with the girls, and through them the mothers were reached and interested. A well defined four year course of instruction has been developed for the girls. This constitutes distinct vocational training in the housekeeping arts, and also affords opportunities for earning money. The work usually begins with the cultivation of a garden and the canning of the products raised. Poultry raising, bread making and

large numbers of farmers and their wives go through the neighboring county, stopping at various points for demonstrations and to examine farm and home equipment, methods, and results. Clubs also are proving helpful. There are at this time approximately 1,350 active home economics clubs in the northern and western states, with an approximate total membership of 27,000. The agricultural colleges are active in furnishing suggestive monthly progress for those clubs. The visits of state specialists to these clubs are necessarily few, however, and instruction by such means can not reach a large number of women.

Realization of this has brought about in many countries a demand for county women agents who may devote more time to the work. Where such agents have been provided, their work has been taken up with enthusiasm by the farm women. The women agents are working through clubs, the granges, and schools, calling for assistance when necessary on the state agricultural colleges and the specialists of the federal department of agriculture. The men and women county agents are coöperate, but coöperate and advise with each other freely.—United States Department of Agriculture.

STARS AND SEA

A. B. Hervey

The night is calm and cloudless,
And still as still can be,
And the stars come forth to listen
To the music of the sea.

They gather, and gather, and gather,
Until they cloud the sky,
An listen in breathless silence
To the solemn litany.

SUNFLOWERS

A close election resembles many of the voters.

No, gentle reader, "Pollyanna" can't be successfully recommended even to campaign managers. The winners don't need it, and the losers wouldn't read it.

The temperature went down to 15 degrees or so the other evening, and all the dear girls removed their furs. What would happen, we politely wonder, at 50 degrees below zero?

STRICTLY MODERN

A modern girl in every way,
Is buxom Betsie Bang,
She spends a part of every day
In learning some new slang.
—Youngstown Telegram.

A modern girl and very gay,
Is Rhoda Retta Rose,
She studied hard to find a way
Of wearing fewer clothes.
—Warren (O.) Tribune.

A modern maid, right up in style,
Is Angelina Snooks,
She plays the haughty beauty while
Her mother sews and cooks.
—Springfield Union.

A modern girl yet in her teens
Is May Louisa Redd,
She buys the racy magazines
And reads them all in bed.
—Topeka State Journal.

A modern girl, some little belle,
Is Rita Revellers,
She climbs up Henry's coat lapel,
And purrs and purrs and purrs.

A QUARTER CENTURY AGO

Items from The Industrialist of November 14, 1891

H. W. Jones, '88, is employed as instructor in mathematics at the Texas Normal college at Denton.

Lieutenant Nicholson of Fort Riley has received the appointment of quartermaster sergeant, seventh cavalry.

The barn on the college hill farm has been fitted up for experiments in veterinary science, and will be occupied at once.

Mayor Hacker of Leavenworth made a hasty round of college buildings late Tuesday afternoon in company of General McDowell.

A. O. Wright, '91, is at home for a two weeks' vacation in his school at Burr Oak. He will do local work on the Nationalist while here.

Professors Olin and Georgeson are on the program of the Riley County Sunday school convention to be held in Manhattan on November 27 and 28.

Regent Wheeler was one of the committee on resolutions of the National Farmers' congress in session this week at Sedalia, Mo. He is a delegate from Kansas.

Janitor McCreary's friends rejoice with him in his almost complete recovery from an attack of acute neuralgia of several months' duration, which almost made life a burden to the sufferer.

On her return from Hutchinson, Mrs. Kedzie spent a day in Newton visiting with old school friends, and was entertained in the evening by Mrs. Noble Prentiss and a company of ladies.

Professor Georgeson has purchased 20 grade shorthorn steers, selected from the large herds of Judge Sutton at Russell. They will be here next week ready for the feeding experiments to be tried this winter.

Professor Nichols, who, his friends feared, was almost in the state of mind to make a vigorous argument on the affirmative side of that mooted question, "Is marriage a failure?" again enjoys the company of his helpmeet, who returned on Saturday last from an extended visit in Chicago.

AMONG THE ALUMNI

Miss Edith Updegraff, '16, of Topeka spent the week end at the Pi Phi house.

Arthur H. Montford, '13, is teaching agriculture, physics, and chemistry in the Paola high school.

Miss Mary Churchward, '15, was a week end guest at the Pi Phi house. Miss Churchward is teaching in the Wichita schools.

Fred Sears, '92, professor of pomology in the Massachusetts Agricultural college, was a visitor on the campus Saturday.

Victor F. Stuewe, '15, has a live stock farm near Alma. He is breeding Holstein-Friesian cattle and Duroc-Jersey hogs.

Miss Ruby Blomquist, '14, spent Home Coming day at the Pi Phi house. Miss Blomquist is teaching in the city schools in Kansas City, Kan.

Ernest Wheat, student in 1899-1901, with his family was here for Home Coming day, driving 350 miles in his motor car from Fair Valley, Okla.

Miss Mary Polson, '16, is teaching domestic art in the Paola high school. She spent Saturday with her sister, Miss Izil Polson, '14, in Manhattan.

Miss Charlotte L. Spier, '13, visited the college while on her way to Topeka to attend the state teachers' meeting. She is for the second year teaching domestic art in the Salina high school.

Miss Louise Greenman, '16, visited at the Pi Phi house in the week end. Miss Greenman is teaching in the Kansas City (Kan.) schools. She is also teaching in the night school there.

Miss Mabel Glenn, '14, came to Manhattan Friday for the game. Miss Glenn is teaching in the Burlington schools. She is in charge of the domestic science department and finds the work interesting.

Howard D. Matthews, '04, of Schenectady, N. Y., was the Prohibition candidate for senator from the Thirty-first district. Mr. Matthews is in the engineering department of the General Electric company.

H. W. Gore, '10, is farming under the United States government strawberry reclamation project, Santaquin, Utah. H. A. Fearey, '11, and Mrs. Maybeth (Robinson) Fearey, '10, live about 12 miles away. Mr. Gore writes that he often sees them.

O. W. Weaver, '11, has been elected agricultural editor in the University of Florida. Mr. Weaver took work in industrial journalism and printing in the college, and has since his graduation been in the newspaper business, being now proprietor of the Sedgwick Pantagraph.

BIRTHS

Born, to Mr. R. E. Karper, '14, and Mrs. Karper, Lubbock, Tex., on November 3, a son, Robert Earl.

Born, to Mr. P. C. Vilander, '11, and Mrs. Bessie (White) Vilander, '10, of Peabody, on November 9, a son, Everett Leon.

Born, to Mr. George L. Whitcomb and Mrs. Enid (Redden) Whitcomb, '13, Cedar Point, on October 25, a daughter, Dorothy Elizabeth.

BOARD MEETING

At a meeting of the board of directors Saturday it was decided to handle the loan fund through a committee of the alumni. The following were appointed: Dean J. T. Willard, '83; George H. Failyer, '77; Claude M. Breese, '87; Albert Dickens, '93; Miss Ada Rice, '95.

Up to the present time 86 pledges of \$20 each have been made and \$675 in cash has been received. The committee is in a position to receive new pledges at any time.

The board also voted to send out a circular letter for the collection of the dollar dues. Alumni wishing to save the expense of the letter, should send their dues at once to the treasurer, Prof. L. A. Fitz, Manhattan.

Another project which the board felt that it could not abandon was the Commencement dinner. It will be served to the members of the class of 1917, and an effort will be made to secure the attendance of the entire class.

ALUMNI DINNER

The alumni dinner given on Friday at the First Baptist church in Topeka was attended by 151 enthusiastic alumni and friends of the Kansas State Agricultural college.

Prof. H. L. Kent, '13, was in charge of all arrangements and acted as toastmaster. Mrs. Cora G. Lewis, of the board of administration, brought greetings from the board. J. T. Charles, a former student, brought a word of cheer and good will from the farmers of Kansas. Prof. Roy A. Seaton, '04, representing the athletic board, reported the new organization of the department of physical training and made a plea for Home Coming day. Dean J. T. Willard, '83, gave a report of the student loan fund, and Prof. Albert Dickens, '93, spoke on the college loan fund. All joined in the singing of "Alma Mater," led by Mrs. Josephine (Perrill) Adams, and in the college yell, led by J. S. McBride.

DISCUSSES AGRICULTURE

Courses of study in agriculture adapted to specific parts of the state, inated of a state course, were advocated by W. R. Curry, '14, instructor in agriculture in the Cottonwood Falls high school, in an address at the agriculture round table of the Kansas Teachers' association in Topeka Friday.

"The reasons for a state course of study have ceased to be," said Mr. Curry. "Any school able to offer a course in agriculture can afford a man who has had training and experience enough so that he can be trusted to teach agriculture without a course outlined for him to follow. He ought to have a course but he should write it himself, submit it to the state superintendent for approval and follow it as carefully as he can. Changes must be made owing to weather and crop conditions.

"A corps of inspectors should supervise the teaching of agriculture to insure proper use of the students' time and guard against possible failures. This plan is now in operation in the state of New York and is meeting with wonderful success."

HYDROCYANIC GAS SPELLS SURE DEATH TO ALL BUGS

Is Dangerous to Use, However, Unless Operator Knows His Business

Fumigation with hydrocyanic acid gas is the only sure cure for bedbugs but is dangerous to use unless the operator understands the proper method and precautions. There are other methods of combatting these pests.

Benzine or gasoline is sometimes used in the control of the bedbug. It should be sprayed into all cracks, crevices, and places of concealment by means of a hand atomizer, according to G. A. Dean, professor of entomology in the Kansas State Agricultural college.

A solution of corrosive sublimate is an excellent remedy, but care must be exercised in its use on polished furniture or the varnish will be injured. This is a poisonous substance and is dangerous to have in the house unless proper precautions are observed. Have the bottle containing it well labelled and out of the reach of children.

Bedbugs may be carried in laundry or picked up in the clothing of persons riding in public conveyances, such as cabs, railway cars, steamships, and street cars.

Other harboring places of this pest are in trunks, suitcases, and baggage rooms. It is not uncommon in hotels and restaurants.

Migration of the bugs from one house to another, while rather uncommon, is still another means of infestation. Full directions for fumigation with hydrocyanic acid gas are furnished upon application to the department of entomology in the Kansas State Agricultural college.

LECTURE IN 30 TOWNS

SPECIALISTS JOIN IN COURSE FOR RURAL COMMUNITIES

Agricultural and Educational Discussions, Readings, and a Pageant Are Presented Under Auspices of College Department

The rural community lecture course, recently established under the auspices of the rural service department in the Kansas State Agricultural college, is proving popular. Thirty communities have contracted for it.

The course consists of five numbers and is offered for \$80. The first number is an evening of readings from Kansas literature and is given by a young woman from the department. She will remain a week in each community and train the children for a pageant to be given locally entitled, "The Folks who are Building Kansas." It comprises the second number of the course.

ON COMMUNITY BUILDING

The remaining numbers on the course are three lectures, "Building the Kansas Community," "My Neighbor," and an agricultural lecture by a member of the college faculty.

"The purpose of the course is to bring before the small rural community in an entertaining way, the educational work in rural improvement, at a cost within their means," said Walter Burr, director of rural service for the college. "Many small communities are denied the advantages obtained in a lyceum course because they cannot afford to pay the price that the regular lyceum bureau has to charge to bring high grade talent before the people.

IS WELL WORTH FEE

"The department has taken into consideration the amount that the small community can pay for such a course and by careful planning and by securing some talent already paid by the state, we are able to furnish a course of lectures which we feel will be well worth the money to the communities.

"It is sometimes asserted that rural communities fail to get things they could, because they will not pay for them, but the contract for this course requires payment before opening the season and nearly all the communities have responded promptly."

PAOLA BOYS AUCTION OFF SELECTED CORN FOR SEED

Get \$77 for 21 Bushels at Paola Farm and Home Institute

An auction sale of seed corn raised and selected by boys in the county was a feature of the farm and home institute recently held at Paola. Twenty-one bushels of the best seed was sold for \$77.

The proceeds from this sale are to be used in paying the prizes to the winners in the boys' club and contest work. These prizes in most cases will be trips to the Farm and Home week at the Kansas State Agricultural college February 5 to 10.

REMICK HEADS ASSOCIATION OF MATHEMATICS TEACHERS

Local Professor is Elected at Annual Meeting in Topeka

B. L. Remick, professor of mathematics in the Kansas State Agricultural college, is the new president of the Kansas Association of Teachers of Collegiate Mathematics. He was elected at the recent annual meeting in Topeka.

The organization is a section of the Mathematics Association of America, recently formed to care for the interest of mathematics in colleges and universities.

ATCHISON BOYS MAKE FINE RECORD IN PIG CLUB WORK

Taylor Tells of Activities in County—State Has 400 Members

An exceptional record of pig club work is reported by Charles H. Taylor, county agent for Atchison county. "Earl Delfelder has a pig 7½ months old that weighs 355 pounds and his brother Harold has one the same age weighing 326 pounds," writes Mr. Taylor. "These pigs were farrowed March 19 by a sow purchased at the H. B. Walters bred sow sale last February.

"The boys entered the contest when the pigs were 12 weeks old and, although in the two weeks following vaccination the pigs did not gain a pound, they have made a wonderful record. They won \$10 each at the Effingham fair and sold as boars at \$35 each. They were a bargain at these prices, as they would bring nearly the same money on the open market. Earlier in the season a litter mate weighing 100 pounds was sold for \$20. According to the boys' figures, they produced this pork at a cost of about four cents per pound, feed only considered."

These clubs are conducted by the farm bureau and county agent in cooperation with the teachers of the county and with the extension division of the agricultural college. There are about 400 pig club members in the state.

COMMUNITIES ARE KNOWN FOR TYPES OF FARMING

Concerted Effort in One Direction Gives Valuable Advertising for and Also Saves Money

The type of farming followed by a community often gives it wide advertising, according to W. E. Grimes, assistant professor of farm management in the Kansas State Agricultural college.

"Certain communities are known because they produce certain products. Persons wishing to purchase those products, will go to those communities to get them. A farmer within a community who is not following the same type of farming as his neighbors, is losing an opportunity to profit by the community advertising.

"This is particularly true in live stock production. Anyone wishing to purchase purebred animals, would much prefer to go to a district where the majority of the farmers are producing purebred stock of the kind which he is seeking. He knows that if he cannot obtain what he wants from one farmer, others in the same community will have it. Buyers for stock are obtained more readily in such communities than in the case of the isolated breeder who is not profiting by the community advertising.

"Efforts of the entire community can be combined towards the development of a particular type of farming. All will require the same supplies, the same type of implements, and the same kind of labor. This affords opportunity for cooperation in purchasing supplies, obtaining buyers for products, and advancing in many ways the interest of the community for the benefit of all."

GARDENS SHOULD BE CLEANED UP BEFORE WINTER ARRIVES

Fall Plowing Conserves Moisture and Kills Larvae of Insects

Gardens should be cleaned up and plowed before winter comes, according to M. F. Ahearn, professor of landscape gardening in the Kansas State Agricultural college.

"Old plants should be pulled up and burned," said professor Ahearn. "Parsnip roots should be dug and piled on the ground, so they will be easy to obtain for winter use. They should be covered with leaves or straw.

"Fall plowing conserves moisture, kills some of the larvae of insects, and prevents some weeds from going to seed. Barnyard manure, if available, should be turned under, allowing from 15 to 20 tons to the acre. Ground plowed in the fall warms up more quickly in the spring."

TO NAME NEW WHEAT

(Concluded from Page One)

be generally distributed throughout the hard wheat belt of Kansas as rapidly as possible. At present 19 farmers in different sections of Kansas are growing the variety in large enough fields so that the seed may be kept pure. About 50 acres of ground on the different experiment station farms have been seeded to this wheat. With normal weather conditions there should be several thousand bushels of seed available from these different sources for seeding next season.

SOONERS TO PLAY HARD

CLEVENGER EXPECTS NO EASY GAME AT OKLAHOMA SATURDAY

Men Get Through Victorious Struggle with Missouri Without Serious Injuries—Plan to Reconstruct College Athletic Field Soon

With Bennie Owen's cripples back in the game next Saturday the Aggie Wildcats will have one of the hardest games of the season next Saturday at Norman.

"If I can beat you fellows, things will go well the rest of the season," Coach Owens told Z. G. Clevenger, Aggie head coach, after the game with Missouri last Saturday. "We will strain every nerve to win.

OKLAHOMANS IN CONDITION

"The Missouri cripples had recovered sufficiently to work in the game last Saturday," said Coach Clevenger yesterday, "and now it seems that the Oklahoma hospital list is to be wiped out in time for the game at Norman. While I wish the cripples no ill will, this means that we are in for a fight at Oklahoma—and a fight to the end.

"The team played good football Saturday. Missouri played a stronger game than against Texas the previous week. Our men got through in good shape—no serious injuries."

MANY FORMER STUDENTS BACK

Several hundred former students saw the Aggies nose out a 7 to 6 victory over Missouri last Saturday. The game was the kind that gets on one's nerves—it was anybody's game until the whistle blew. The crowd was the largest of the season, and an unusual amount of "pep" was displayed in the rooting. The attendance was cut down somewhat on account of the cold.

A plan for the reconstruction of the college athletic field was briefly outlined by Dr. Henry J. Waters, president of the college, at a rousing "pep" meeting in the college auditorium Friday night. The plan will be completed at a conference to be called by Doctor Waters.

WILL SOON GET USED TO WEEDS OR TO FLOWERS

Child Gets Standards, Moral and Artistic, from Conditions That Surround Him, Says Educator

That the early environment of a child is an important factor in the shaping of its tastes and future ideals, is the opinion of Dr. E. H. Reisner, associate professor of education in the Kansas State Agricultural college.

"If a child grows up in an environment where tin cans, weeds, and dirt are present instead of well planted shrubbery, green grass, and flowers, he will come to feel natural in such surroundings," said Doctor Reisner.

A boy's standard of taste as well as of morality, pointed out Doctor Reisner, comes from examples that are forced upon him through daily observation. A girl raised in an untidy, ill kept house, decorated with gaudy, meaningless pictures, will be satisfied with the same conditions in her own home.

The home and the school may cooperate in the cultivation of a taste for beauty, cleanliness, neatness, and orderly arrangement. An attractive school house tastefully and architecturally planned with well kept and well arranged grounds may be the means of inculcating good taste in the child and may be the beginning of a new standard of living of a community.

School property, thinks professor Reisner, ought to be a standing object lesson in taste. Marks of beauty should be provided in the way of good pictures, proper color schemes, flowers, and shrubbery. The rural school has a great possibility before it in the development of taste and better ideals of living in the country boys and girls.

Nearly 1,000 miles a month is traveled by A. D. Folker, county agent of Jewell county, in his agricultural duties, according to his quarterly report. Among other interesting matters in the quarter were 126 farm visits, 52 demonstration visits, 84 meetings, and the writing of 281 personal letters, 1380 circular letters, and 130 newspaper articles.

IN SUPPORT OF BILL FOR ENGINEERING EXPERIMENT

DEAN A. A. POTTER URGES ACTIVE STEPS BY LAND GRANT INSTITUTIONS AND SCIENTISTS INTERESTED IN INDUSTRIAL RESEARCH—IS SECRETARY OF ASSOCIATION

More active steps to secure the passage of the Newlands bill for the establishment of engineering experiment stations in land grant colleges were urged by A. A. Potter, dean of engineering in the Kansas State Agricultural college, in an address this week before the Land Grant College Engineering association in Washington, D. C.

Dean Potter is secretary of this organization as well as of the engineering section of the American Association of Agricultural Colleges and Experiment Stations, which met at the same time.

EUROPE PREPARES FOR PEACE

"The war stricken countries of Europe," said Dean Potter, "are spending large sums of money to further industrial development, in preparation for peace. When peace is declared there will be great competition between the different nations for trade. Victory in this commercial war for industrial supremacy will depend upon science and research applied to industrial problems.

"It is a well known fact that researches in engineering and in the other branches of the mechanic arts have been greatly neglected in the United States. Every thoughtful person is awake to the need of radical steps for encouraging industrial research in this country. Those who are looking towards the future are also convinced that such research work must be started without delay.

PARALLELS AGRICULTURAL WORK

"The Newlands engineering experiment station bill for systematic experimentation in engineering and in the other branches of the mechanic arts is analogous to the aid provided by the Hatch act of 1887 and is for the purpose of paralleling the excellent work which has been carried on by the agricultural experiment stations in land grant colleges. This bill introduces no new precedent. The proposed bill and the Hatch act are supplementary to the Morrill acts and will aid us in holding our own in the world struggle for commercial and industrial supremacy.

"One of the first objections raised to the Newlands bill was the creation of many scattered experiment stations. Many were in favor of several large experiment stations. This objection was overcome by Dr. W. R. Whitney of the United States naval consulting board, and director of the research laboratories of the General Electric company, in the following statement:

TO HELP MANY INDUSTRIES

"If the amount of money represented by the Newlands bill proposal were centered in a single organization, it would not to my mind, serve the purpose half as well. In the first place, it would not discover the men in our colleges who are now in a position to do advanced scientific work. It would cut out local interests and possible state appropriations and would not take advantage of the enormous amount of available apparatus in the colleges."

"The Newlands bill makes large equipment available for general research at points where exist the raw materials, the men, and the local problems. An experiment station in each state will be in direct contact with the industries of the state.

TO COÖPERATE WITH AGRICULTURISTS

"The location of the proposed experiment stations at land grant institutions will result in close coöperation between the engineering and the agricultural experiment stations. Such coöperation will prove beneficial to modern agriculture and will also result in the utilization of waste materials from the farms. The increased use of farm machinery and of farm motors on modern farms merits much engineering investigative work of direct benefit to the agricultural industry.

Other engineering investigations, such as road buildings, rural architecture, drainage and irrigation, can best be carried on at land grant institutions, where the engineering experimenters can secure valuable aid from their colleagues in the agricultural experiment stations.

"Engineering research and scientific investigations are important factors, not only for the industrial development of a nation, but also as a means of military and naval preparedness in times of peace or war. The Morrill act creating the land grant institutions places military tactics as one of the leading subjects to be taught in such institutions. Since the passage of the officers' reserve training corps act, the land grant institutions are becoming extensive training schools for the army and will play a very important role in the military preparedness program of this country. Agricultural and engineering experiment stations in these land grant colleges will be linked with military training and will form a strong basis for industrial and military preparedness.

WOULD ADD MILITARY FEATURE

"A necessary modification of the experiment station bill will be the insertion of a clause which will link the military feature, as previously explained, with the engineering research stations.

"At the hearing of the Newlands bill before the committee on agriculture and forestry on June 24, 1916, I suggested the following modification of the first section:

"That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with engineering and other branches of mechanic arts and to promote the scientific investigation and experiment respecting the principles of applications of the mechanic arts, there shall be established under the direction of the land grant college requiring military science and tactics of all male students in each state or territory established . . ."

"I recommend that this section be further modified so that the experiment stations will coöperate with the army and the navy in carrying out the officers' reserve training corps act.

"Now is the psychological time for us to push the engineering experiment station bill at land grant institutions, to a successful issue. Our success depends upon the activity with which land grant institutions will work for the bill. The majority of land grant institutions have been lukewarm in their support of the measure. I am convinced that, with proper organization, such enormous influence can be secured by this association as will overcome all opposition."

COLLEGE HAS EXHIBIT OF VALUABLE PAINTINGS

Pictures by William H. Singer Are Shown by Home Art Department—Valued at \$24,000

Original paintings valued at \$24,000 are on exhibition in the home economics building of the college. The exhibit will continue for several weeks and will be open to the public without charge, through the courtesy of the home art department.

The pictures are by William H. Singer, a young American artist who has won distinction both in Europe and in this country. A descendant of the man who capitalized the sewing machine, he early turned his attention to painting, and has achieved in this field success comparable to that of other members of his family in business.

The paintings are all landscapes, decidedly modern in treatment. They were painted in Europe.

Manhattan is the smallest city in which the pictures are to be shown. They have been on tour from New York, and were most recently exhibited in Des Moines, Iowa City, and Council Bluffs, Iowa, under the auspices of educational institutions. They are to be returned to New York next month.

"From the smoke of Pittsburg to the brilliant atmosphere, the vivid coloring, the white-capped mountains of Norway," writes Authur Hoeber, the well known critic, with reference to Mr. Singer's work, "is change indeed, and though nurtured in the coal regions of Pennsylvania, educated in the environment of soot and grime of Pittsburg, the great city of coal and iron, Mr. William H. Singer, always happily able to journey whither his fancy led him, has, of recent years, found inspiration in fjords, hills, country stretching away, rapidly rushing rivers, all the beauty, the freedom of the land of Vikings.

"Known to but few outside of his modest artistic set Mr. Singer came to New York this season at the Folsom galleries with a show of some dozen and a half of canvases so virile, so personal, so enthusiastic and spontaneous in execution, as to take at a bound a place among the men doing the things worth the while in art.

"Mr. Singer is practically without instruction in the schools. For a long time he worked by himself in Pittsburg, and in 1900 he went to Paris where he entered the Academie Julien and remained but three brief months, after which he sought nature, for his bent lay entirely with landscape in the open,—first to Holland at Laun and subsequently to the little Norwegian town of Nordfjord, a small fishing village, and later to Oldham, in the hills. In all these places he found material a plenty that greatly appealed to him. The subsequent year, 1901, he made his first exhibit, appearing at the Old Salon in Paris, but after that he cast his lot with the more progressive crowd at the New Salon, and there he has been represented, year after year, with canvases that have attracted considerable attention.

"All of his work, it may be stated, has been painted entirely before nature and has not been subsequently retouched, for Mr. Singer maintains he cannot, in the quiet of his studio, obtain any of the thrills produced by the open. He paints, too, with much rapidity, rarely spending more than two seances on any canvas, preferably but one, though prior to attacking his compositions they receive much preliminary consideration, much contemplation, so when he is ready to proceed he knows his theme with an intimacy that makes for excellent results. I think one may see at a glance the absorbing interest the man discloses in all he attacks, this spontaneity and enthusiasm, this innate love of nature, this impelling force that makes for conviction and impressiveness. In the matter of color the man is entirely personal. He sees the tenderness of tones, the poetry and charm of atmosphere, the envelopment and the harmony of the open. With it all he is direct, simple and obsessed by no parti pris, going to his picture with a mind singularly open. And he draws the landscape as one having authority, designing only after much serious observation and reflection. In short, Mr. Singer is a distinct art personality, a newcomer to be welcomed, to be kept track of, a man who has done much worth the while, but who promises with the years to do more. The movement of his 'Salmon River,' the dignity of his 'Birches,' the refinement and subtlety of his snow in 'My Garden' and the delicate analysis of his 'Falls' are all refreshing and novel, pre-saging much for the future and giving satisfaction in the present accomplishment."

DO NOT BUY FERTILIZER

KANSAS FARMERS FIND PROPER TILLAGE AND ROTATION BETTER

Commercial Product Is Useful Only in Southeast Corner of State—Organic Waste Matter May Be Profitably Applied to Soil

Kansas as a state does not need to use commercial fertilizers, and will not require them for some time to come, if the proper tillage and rotation systems are employed, in the opinion of R. I. Throckmorton, associate professor of agronomy in the Kansas State Agricultural college.

In just one small section of the state is the application of fertilizing material advisable—a portion of the southeast corner—points out Professor Throckmorton. In this section the soil is derived from sandstone and shale or shale alone. In tests conducted there by the experiment station "special bone meal," which supplies phosphorus, increased the wheat yield 100 per cent. In no other part of the state have commercial fertilizers proved profitable.

ENCOURAGES APPROVED PRACTICES

It has been found to be good practice to provide for adequate tillage and rotation systems and for returning manures, straw, and other organic waste matter to the soil. In other words, approved farm practices are to be encouraged, rather than the idea of supplying additional plant food.

"The principal plant foods supplied in commercial fertilizers are nitrogen, potassium, and phosphorus," commented Mr. Throckmorton. "In addition to these elements the fertilizers contain a body which may be made up of dried manure, cinders, slag, ground rock, and various other mixtures of like nature. These are of course necessary to some extent, for they furnish means of evenly distributing over a large area a small amount of the plant food, but they are somewhat deceiving to the farmer who has not closely investigated the composition of fertilizers in general.

"By commercial fertilizers are meant fertilizers which are sold for their content of nitrogen, phosphorus, and potassium.

RETURN MANURE TO SOIL

"Barnyard manure, straw, and all kinds of organic matter may be added to Kansas soils with profit. Especially is this important in sections lacking in organic content. Organic matter not only furnishes food for bacteria that make available much of the nitrogen of the soil but improves the texture of the soil structure and the water holding capacity of the soil as well.

"While the experimental data show that the soils of the state for the most part are not yet exhausted to that point where the use of commercial fertilizers is profitable, it should be also understood that there is no section of Kansas where the farmer can afford to waste his barnyard manure, straw, and other organic matter.

FARM RESIDUES COST LITTLE

"These fertilizers, sometimes called farm residues, can be taken care of with little added expense, generally being applied to the soil at a time of year when labor is cheap, or at odd times. Of course it would not be profitable for the farmer to go on the market and pay several dollars a ton for these residues, but it is profitable for him to utilize them when they are going to waste or can be procured cheaply.

"Experiments carried on at the college farm for a period of three years have shown that barnyard manure is worth \$4 a ton, when applied as a top dressing to wheat followed by two years of alfalfa. In other fields which had their first and only application of manure ten years ago, the effect of the manure upon the color, texture, and quantity of the crops is easily seen. Wheat and alfalfa, however, respond more readily to applications of manure than do other crops."

TOWNSHIP FARM BUREAU PLANS FIVE DAY SCHOOL

Jewell County Organization in Progressive Educational Activity

Farm bureaus in the state are active in organizing extension schools and other educational meetings.

The farm bureau of Browns Creek township, Jewell county, will hold a five day extension school the week of January 2. J. L. Wherry, vice-president of the bureau, is chairman of the extension school committee. A membership committee, a live stock committee, and a committee on arrangements have been named. According to A. D. Folker, county agent, the farm bureau members are enthusiastic over the school.

DEPENDS ON MALE BIRD FOR INCREASING EGG PRODUCTION

Successful Poultryman Realizes Method Necessary for Improvement of Flock

If a poultryman wishes to improve his flock, he must depend upon the male bird, asserts Ross M. Sherwood, acting head of the department of poultry husbandry in the Kansas State Agricultural college.

"The high egg producing qualities of a flock are transmitted by the male bird," said Mr. Sherwood. "A male bird that has come from parents of medium production, cannot produce a high producing individual when crossed with even the best of hens.

"The early maturing stock will contain the high producing birds. These birds should be separated and trap-nested in order to find the best producers.

"When the high producing birds are determined, they should be transferred to a breeding pen and mated to male birds that have come from productive birds.

"The next fall, when the offspring are about to lay, the best of them should be trap-nested and their records determined. After this the ancestors of the birds that were the heaviest producers should be kept for breeding purposes. The ancestors of those that did not make a good record should be discarded.

"It takes at least three years to determine which are the best producing birds. A certain bird may make a record by accident and not be able to transmit the power of egg production to its offspring."

BUY SIMPLE REMEDIES UNDER DRUG NAMES AND SAVE MONEY

Boric Acid Is Example of Articles Commonly Used in Homes

Buy simple home remedies under their drug, rather than trade names, and get them at one-fourth to one-half the trade name price, advises P. J. Newman, assistant professor of chemistry in the Kansas State Agricultural college.

"Boric, or boracic acid, is a drug that is bought every day at high prices under trade names," said Mr. Newman. "It is the principal ingredient in many foot powders and in a number of widely advertised eye remedies."

For a foot powder sprinkle one tablespoonful of the powdered acid in the shoe. Boracic acid will not only relieve tired sweaty feet, but will also remove the odor of sweaty feet.

For an eye wash, use a saturated solution. It is a fine antiseptic, and can be used in a powdered form on open wounds without pain. It is not only effective, but non-poisonous.

In nearly every home where there is a drainage system lye is used to clean the drain traps. Few persons know there are two kinds of lye, the soda and the potash lye. Use the potash lye as it makes a soft soap that dissolves and washes out of the trap more easily than the hard soap formed by the soda lye. A strong lye solution should be put into the drain trap and left over night. Care should be taken not to let the water run through the drain trap during the night.

A bottle containing a saturated solution of borax is a good thing to have for use in a sink. A few spoonfuls of this solution will soften the water and thus cut the soap bill. The solution will prove effective in brightening aluminumware. A mixture of half sugar and half borax will poison every ant that finds the mixture.

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Number 9

USE SUDAN GRASS MORE

FARMERS WILL FIND IT EXCELLENT FOR PASTURE PURPOSES

Is Especially Adapted to Central and Western Part of Kansas—Milk Cows and Other Stock Show Gains—Pasturing Alfalfa in Fall

That Sudan grass should have a wider use as a pasture crop in Kansas, is the opinion of Ralph Kenney, assistant professor of crops in the Kansas State Agricultural college.

"Sudan grass is rapidly becoming recognized as an excellent pasture crop throughout the central and southern plains states," said Professor Kenney. "All sections of Kansas, but more especially the middle and western parts of the state, should be growing this annual pasture crop. It will make more forage than most of the other sorghums when sowed in close drills, and—what is still better—will produce it as it is being cropped off by live stock.

SECURE CLOSE, EVEN STAND

"Fifteen to 20 pounds should be drilled to the acre, when planted for pasture. This gives a close, even stand, well suited for pasture purposes. It is well to remember that Sudan grass is a sorghum and might produce prussic acid poisoning if a stunted growth should be used for pasture. Samples have been analyzed, showing in some cases a trace of prussic acid. Some care should, therefore, be taken at first in allowing live stock to graze upon it.

"Especially should care be exercised when a short growth is pastured during a protracted drouth. There is practically no danger when the plants are growing vigorously.

RESULTS AT HAYS STATION

"Experiments carried out at the Hays station show that milk cows made a decided gain in milk production when taken from wild grass and pastured upon Sudan grass. Thousands of farmers are testifying that all classes of stock eat it very readily and do well on it.

"While Sudan grass cannot replace alfalfa, it can fill a place in the general farm rotation, taking the place of millets and other catch crops."

NO HARM TO OLD STANDS

Judicious fall pasturing does no harm to old stands of alfalfa and it saves feed which would otherwise be wasted, according to Professor Kenney.

"Alfalfa is a valuable crop for fall pasture," said Mr. Kenney. "It is more advantageous to pasture the last crop of alfalfa in the fall than to harvest it for hay. The difficulty of curing the last cutting of alfalfa is greater than is the case with cuttings the first of the season and the yield is small.

DOES NOT REDUCE YIELD

"Fall pasturing of alfalfa does not reduce the yield of hay the following season, for all plant food that is to be stored in the root system has been stored before stock is turned upon the field in the fall. Even after a heavy frost or light freeze new shoots will be sent up from the crown. This growth, if heavy, would be wasted if stock were not permitted to graze on the field."

Horses, mules, and swine are more commonly pastured on alfalfa than other classes of live stock, points out Mr. Kenney. Cattle and sheep bloat too easily. Alfalfa is particularly beneficial to young growing stock because of its high protein content. Horses and mules graze alfalfa too closely when allowed on the field late in the season.

GROWTH WILL CATCH SNOW

In the western sections a four or six inch growth of stem should be left so as to catch any snow that falls and

prevent it from forming drifts along the fences where moisture will be wasted. This extra growth is not so important in the eastern sections because enough rain falls during the growing season to supply the needs of the plant. Many farmers find that no damage is done to the stand of alfalfa when stock is allowed to run on the field throughout the fall and winter except when the ground is soft from rains.

In no case should alfalfa be pastured before the stand is three years old, in the opinion of Mr. Kenney. If animals are permitted to run on the field before the stand has reached this mature stage much damage will result because of tramping.

CHINCH BUGS IN FEW LOCALITIES IN STATE

Entomology Specialist Recommends Back Fire Treatment in Cases Where Insects Are Discovered

Chinch bugs are present in limited numbers in a few Kansas localities, according to T. H. Parks, specialist in entomology in the division of extension, Kansas State Agricultural college.

"Wherever they were observed last summer on corn or sorghum," said Mr. Parks, "a close inspection should be made of the clumps of blue-stem and sedge grass adjoining the fields. If a dozen or more chinch bugs are found in each of these clumps the 'back fire' treatment should be given. It is rarely necessary to burn a prairie meadow except along the edge next to the corn field. The bugs usually stop at the first clumps of dense grass. Hence it will be necessary to burn a strip only about two rods wide.

"Special attention should be given to the dense grass along the fence rows. The railroads are doing their part to dispose of this. There is no better way to use the spare time after fall seeding is over and thus prevent the chinch bugs from getting another foothold on Kansas farms. First examine the bunch grass and if the bugs are present, fire the grass when it is dry down to the crown."

EARLY FEED AND CARE ARE IMPORTANT FOR DAIRY CALF

Modern Experiments Show That Good Flesh Is Desirable Feature

The importance of feeding and caring for dairy calves is emphasized by J. B. Fitch, associate professor of dairy husbandry in the Kansas State Agricultural college.

"Calves should be fed whole milk until they are one month old, when they should be changed to skim milk," said Professor Fitch. "They should be fed skim milk until they are six months old. While they are on milk they should be given some grain and alfalfa hay.

"A good mixture for grain feed is four parts of corn or corn chop, one part of oil meal, and two parts of wheat bran. After taking the calf off the milk increase the grain gradually to two pounds a day in addition to silage and alfalfa hay.

"It used to be considered that good flesh was undesirable in dairy calves, but experiments show that this is not the case and that quite the contrary is the case, especially before calving.

"The heifers should be bred so as to calve when from 24 to 30 months of age depending upon the breed and growth of the animal. The Guernsey and the Jersey should be bred so as to calve when from 24 to 26 months old, while the Holstein and Ayrshire breeds should be bred so as to calve when 30 months of age. If bred so as to calve earlier than this, their growth is apt to be injured."

ICE WILL COST LITTLE

KANSAS FARMER MAY PUT IT UP HIMSELF AND SAVE MONEY

Fourteen Freezings with Simple, Inexpensive Apparatus Will Supply Product to Average Family for Full Year, Says Doctor Walters

Put up your own ice. An easily available water supply and a little ingenuity are the requirements for producing ice on Kansas farms at small cost, according to Dr. J. D. Walters, professor of architecture in the Kansas State Agricultural college.

"The ice making apparatus is simple and may be procured for a small sum," says Doctor Walters. "Tanks for freezing ice are usually made of galvanized iron, and should be large enough to hold at least 12½ cubic feet of water.

HOW TANKS ARE ARRANGED

"An ice cake weighing about 120 pounds measures approximately 10 by 18 by 20 inches. This is a well proportioned cake, and one that is easily handled and packed. By using a tank with a capacity of 12½ cubic feet, it is possible to freeze six cakes of these dimensions at one time. If more ice is required it is but a matter of extending the freezing process to supply the demand.

"Two tanks are arranged, one inside the other, in such a manner as to leave a free space of about one-half inch between the two. Both tanks should be slightly larger at the top than at the bottom, so that in the freezing of the water, there will be no danger of their bursting. In order to make a division in the ice cakes, the inner tank is divided into six compartments by galvanized iron strips.

WILL FREEZE IN FEW HOURS

"This double tank is placed near the well or spring, where the compartments can be easily filled with water. In cold weather the water will freeze in a few hours, since the tanks are exposed on all sides. The ice should be dumped immediately after it is frozen solid. To remove the ice cakes, scalding water is poured into the narrow space between the two tanks. Within a minute the sides will be sufficiently loosened so that upon the upsetting of the receptacle, the cakes will slide out.

"Fourteen freezings will make more than five tons of pure, clean, ice, or enough to last an ordinary family a year. This estimate allows for an average daily consumption of 20 pound winter and summer, and also a liberal amount for melting. Figured at 60 cents a hundred pounds, the ice will represent a value of \$60. The tanks and the necessary ice closet that has to be provided in a corner of the cellar, together with a load of sawdust or straw for packing, should cost considerably less than this sum.

STORAGE ROOM IS NEEDED

"A ton of ice occupies approximately 40 cubic feet. From these figures it is seen that a year's supply for the average family will require a place for storing equivalent to 200 cubic feet of space. If the storage room is provided in the basement of the house, it need not be more than six feet square. The partitions can be built in any manner, but it is well to line the entire room with heavy building paper. If the ice is carefully packed and kept reasonably dry, little trouble should be caused by its melting.

"Where a considerable quantity of ice is made, it will pay the farmer to build a cheap ice house, or to provide a separate underground cellar for storage purposes. It is much cheaper to dig the ice cellar, but this method of storing ice is not nearly so convenient.

ICE HOUSE NOT COSTLY

"A small ice house measuring 10 by 14 by 8 feet, built of ordinary cypress lumber, lined with tar paper and paint-

ed with two coats, should not cost more than \$100. The foundation should be constructed of concrete, and should extend below the frost line and one foot above the ground. The superstructure should be well secured to the foundation by either lag bolts or tie rods extending into the concrete six inches. Build a good three by six door of two thicknesses of lumber; hang it with a pair of heavy strap hinges, and lock it with a strong hasp and staple.

"Unless the soil is well drained it is necessary to provide some method to keep the floor of the ice house thoroughly dry. A thick gravel bed over the whole floor, or a four inch tile drain to the center of the room, will take care of this difficulty.

HOW TO PACK THE ICE

"The first layer of ice should be set up edgewise on a thick bed of straw. Place the second layer horizontally in such a manner as to break joints with the first. Eight or 10 inches should be left between the ice cakes and the outside wall. This space should be filled with well packed straw. A layer of straw about eight inches thick should be placed on top of the ice after it is all in place. Sawdust may be used in packing, but it is more expensive and not accessible in many parts of the country.

"The cellar, or pit, type of ice house is frequently used regardless of its many drawbacks. The principal objection to the pit ice house is the difficulty in obtaining satisfactory drainage. If the pit is dug in sandy soil, the water from the melting ice may sink into the ground and drain away. Even though the soil be unusually coarse, it is at times necessary to provide drain tile to keep the floor of the pit perfectly dry. Under no condition should the pit be dug in clay soil, if any other location is obtainable.

"The essential factor in successfully storing ice, is to keep it absolutely dry at all times."

CAN'T GET BEST BEEF FROM INFERIOR CATTLE

Farmers Will Obtain Most Economical Gains on Well Bred Animals—Marks of Good Feeder

As soon as farmers appreciate the fact that high class beef cannot be made from trashy cattle, an important source of loss to feeders in this state will be eliminated, asserts Dr. C. W. McCampbell, associate professor of animal husbandry in the Kansas State Agricultural college.

"The loss resulting from feeding inferior cattle has been well demonstrated experimentally at the Kansas station," said Doctor McCampbell. "In this experiment, well bred—but not purebred—cattle of desirable beef type were compared with cattle the same age and somewhat larger, yet not of the type most desirable for converting feed into beef.

"The good beef type—quality cattle—made a daily gain of 2.22 pounds while the undesirable type, although receiving the same amount of feed, made a gain of only 1.76 pounds daily. The gain on the good type cattle cost \$8.15 a 100 pounds while the gain on the coarser cattle cost \$10.25 a 100 pounds. This experiment demonstrates that one of the essentials in making beef is the selection of the right kind of feeders.

"A good feeder must be close to the ground, have a short, broad head with a strong muzzle, a wide, straight top, a wide, deep chest, a capacious middle, a deep flank, deep, full quarters, and withal, plenty of substance and lots of quality."

CROP MEN NAME JARDINE

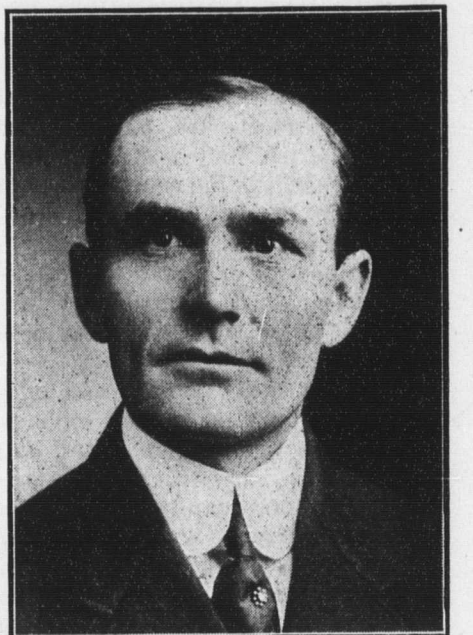
KANSAS DEAN HEADS AMERICAN SOCIETY OF AGRONOMY

Organization Is Probably Best Known Agricultural Body in America—New President Has Been Leader in Educational and Investigative Work

Dr. W. M. Jardine, dean of agriculture in the Kansas State Agricultural college, is the new president of the American Society of Agronomy, probably the best known agricultural organization in America. It comprises 600 members engaged in soil and crop teaching and research in experiment stations, agricultural colleges, and elsewhere.

CHARTER MEMBER OF SOCIETY

Doctor Jardine, who was elected at the meeting in Washington last week, is a charter member of the society and



DR. W. M. JARDINE

has for years been prominent in its work, serving on important committees and in other official capacities.

Before becoming dean of agriculture and director of the agricultural experiment station, Doctor Jardine taught agronomy in the Utah Agricultural college, the Michigan Agricultural college, and the Kansas State Agricultural college. He was for several years assistant cerealist for the United States department of agriculture.

DISCUSSES DIRECTORS' PROBLEMS

At the meeting of the American Association of Agricultural Colleges and Experiment Stations, held at the same time as that of the American Society of Agronomy, Dean Jardine discussed problems coming before directors in carrying on experiments and investigations in the various stations.

Malcolm C. Sewell, assistant professor of soils in the college, addressed the American Society of Agronomy on "The Soil Mulch." The address, which was based on numerous experiments conducted at Manhattan and at the Garden City branch experiment station, aroused much interest among the scientists present at the meeting.

FREQUENT APPLICATIONS OF OIL KEEP HARNESS PLIABLE

Will Also Protect Leather from Water and Weather Conditions

To keep harness in the best possible condition apply oil frequently, advises C. W. McCampbell, associate professor of animal husbandry.

"Oil protects the harness from water and all kinds of weather, and makes it more pliable," said Doctor McCampbell. "The farmer puts oil on harness for the same reason that he puts it on his boots. It softens the leather, making it wear longer, prevents water from rotting it, and keeps the leather from getting hard and cracking."

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ADA RICE, '95, M. S. '12 Alumni Editor

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WEDNESDAY, NOVEMBER 22, 1916

BUTTERING BUSINESS BREAD

It has often been pointed out that agriculture forms the basis of the business of the United States. More than four-fifths of the manufactures of the country depend on the raw products of agriculture. Whatever aids in the development of a stable, progressive agriculture aids in the development of a stable, progressive business of every sort.

The dependence of business on agriculture has been recognized by business men in the last few years, and many of them, especially those in corporations of large capital, have shown by concrete practice how business may aid in the development of agriculture.

One of the most modern plans of this character has been undertaken by the First National Bank of St. Paul, Minn., in the appointment of a live stock specialist. The northwest, tributary to St. Paul, needs well adapted live stock probably more than it needs anything else in agriculture. It is the purpose of this bank to promote the live stock industry in the realization that it will bring more and better business to St. Paul. The bank has published an attractive volume, bound in leather, which it has sent out to farmers in the northwest. The book is full of practical live stock suggestions, written by the bank's specialist. Further plans have been made by the bank in the same direction.

Few business men—few corporations even—can enter the field of agricultural promotion in so elaborate a fashion. Even the smallest, however, can do something. He can help show the value of coordinating the various industries of the nation to the best economic ends. At the same time he will be buttering his own business bread.

WINTER AND THE FARM HOME

Why is winter a dull time on so many farm homes? Such it often is—there's no denying the fact—and yet books written about the farm life years ago or the conversation with pioneers will soon convince one that in the old days winter on the farm had any number of attractive features. For instance, to go back to Whittier,—

"Between the andiron's straddling feet,

The mug of cider simmered slow,
The apples sputtered in a row,
And, close at hand, the basket stood
With nuts from brown October's wood.
What matter how the night behaved?
What matter how the north wind raved?

Blow high, blow low, not all its snow
Could quench our hearth-fire's ruddy glow."

One wonders if there is not something in the changed conditions of modern life which has tended to drive out the old spirit of the pioneers and their children. Is there not a tendency,

as cities have grown up and become factors in national life—as they were not in earlier times—to make the life of the city the norm, the standard? Is there not a tendency to model the life of the farm home on the life of the city home?

Beyond a doubt there are things in city life which may well be transported to rural communities. Modern conveniences in the home are an example. The trouble is, that a lot of the weakest things in city life are getting into the country—unaccompanied, often, by the best things in city life. The constant desire for artificial amusement and the break-up of the family circle are two of the things which intelligent students of city life are trying to get rid of. Yet are not these same things responsible for much of the winter dissatisfaction in many farm homes? The winter dullness is merely a symptom.

What the rural community needs is a life of its own. It may take the best things from the rural life of the past and the city life of the present, but it doesn't need to be a slave to either. The rural population is strong enough to build its own civilization—not a provincial civilization, but a civilization adapted to its real and permanent needs.

RUSSIANS LIKE FRUIT

Before the war a quantity of dried apples from California and Australia were being shipped each year to the Siberian market through Hamburg houses. It is thought that it might now be possible to develop a direct trade with the countries from which these fruits originated.

The Russians are very fond of fruit and the consumption of apples in the chief centers of Siberia is large. Most of the supply for this market comes from Turkestan; but as this fruit is not always of good quality the well-to-do Russians are willing to pay a higher price for apples and other fruits of a higher grade.—California Cultivator.

DRY TERRITORY

To put the facts graphically, the twenty-four states now dry with the parts of the country under local option contain 60 per cent of the population of the country and 85 per cent of its area. In 1909 there were seven prohibition states, last year 16, and now half the states in the union are under prohibitory laws. Michigan, Nebraska, and South Dakota had tried prohibition before and went back to it after trying the license system. A clergyman was beaten at the primaries by the machine in Democratic Florida, and on an independent ticket he beat the "wet" candidate of the dominant party.

In Missouri, St. Louis, the home of the greatest brewing industry in the world, by its vote alone kept the state in the wet column, but the normal majority was reduced by 100,000. Kansas City, which voted five to one for liquor a few years ago, went dry. Kansas City, Kansas, just across the river, won its neighbors over by the spectacle of its prosperity. South Dakota was likewise envious of the prosperity of North Dakota, dry for 10 years. Similar economic arguments appear to have influenced the voters in Michigan and Nebraska, who saw the advance in material wealth in West Virginia, Kansas, and Tennessee.—Rochester Post Express.

DAIRYING IN THE SOUTH

An indication of the hold which the movement for diversification has taken in the south is seen by dairy specialists of the department of agriculture in the growth of the cattle division at the Louisiana state fair in four years from 25 head exhibited to 400. This fair, in a section heretofore not well supplied with dairy cattle, stood second last year among the Jersey shows of the United States.

Other indications of diversification by development of the dairying industry are found in the organization in the south last year, with the assistance of the dairy division of the department,

of three bull associations and three cow-testing associations, the purchase of 927 head of cattle, including 166 bulls, and the establishment of two additional college creameries. An example of what the development of dairying means to southern communities is pointed out by a specialist in Alabama, where practically all the cream supplied to the creameries of the state is produced by native cows. One plant in the boll weevil territory of the state produced last year 129,000 pounds of butter, worth \$39,000. This represents an asset present before the construction of the creamery, but largely wasted or improperly handled at that time.—Farm and Ranch.

CURRENT BOOKS

Alfalfa in Kansas: Report of the Kansas State Board of Agriculture for

were called on for the results of experience and investigations, and authoritative articles by them are contained in the book. Something like a dozen members of the faculty of the agricultural college contribute signed articles.

An extensive and carefully prepared general index, the lack of which makes many reports and other volumes practically unusable, is a valuable feature of this work.

A QUARTER CENTURY AGO

Items from The Industrialist of November 21, 1891

The special session of the Webster society will be held this evening.

Four new students are enrolled this week, making the total enrolment 492.

Professor Popenoe lost about 75 bushels of apples by the recent cold snap.

Forests and Human Affairs

University of California Journal of Agriculture

FORESTS have ever played a vital part in human affairs. Especially is this true of American life. From an economic point of view forests protect our earth covering, conserve moisture, and supply us with wood. Wood enters into the vast majority of human activities, man has been cradled in wood, plays with wooden blocks, is housed in wooden structures, to a great extent works with wooden equipment, when old age overtakes him a wooden cane and rocker are close companions, and finally he starts his last long journey to the far country in a wooden encasement. But forests have had, in addition to the economic effect, a most striking spiritual effect on the American people. The first settlers wrested their few stumpy acres from an unwilling forest and by will and muscle carved out our first homes, developing in the effort a strong virile character so needed in the early days of the country. Today men no longer take their farms by main strength from the forests. On the contrary, we are conserving through rational use the remaining timber of the forest areas. We are receiving a new spiritual heritage from those who today come in contact with the forest environment. There has developed in the forest service of this country the spirit of pure unselfish service so needed in all public work and administration today. There is no place in this field for the man of small caliber, the very nature and associations exclude him. It is the place of men who have

"Done things for the doing

Letting babblers tell the story."

In no group of men can there be found a higher type of altruism combined with a harder kind of daily toil. There is something about forests and their relations to the public well being that permeates into the spirit and actions of those whose duty calls them within such an environment. It is the field of

"The simple things, the true things,
The silent men who do things."

We need this same spirit in all our work. May the time come when this same rugged adherence to unselfish ideals will find a ready response in all those who would hold public office. The forest service is leading the way.

the quarter ending June, 1916. Octavo, pp. 484. Topeka: W. R. Smith, State Printer.

A more comprehensive study of a single crop in any state has probably never been made than "Alfalfa in Kansas," the 484-page book just issued as the quarterly report of the Kansas State Board of Agriculture through the efficient work of J. C. Mohler, secretary, and H. W. Doyle. No problem which might conceivably arise in the growing of alfalfa in this part of the country, is omitted from the exhaustive discussions which fill the volume.

The history of the crop both in Kansas and in other parts of the world, the proper soil, varieties of alfalfa, irrigation of alfalfa, haying, silage, plant diseases, injurious insects, the relation of bees to alfalfa, alfalfa as a feed for farm animals, the alfalfa milling industry, and the place of alfalfa in farm management, are a few of the suggestive topics taken up. Practically all the articles are illustrated with well selected photographs or well executed drawings, which decidedly add to the value of the text.

The comprehensive character of the work was made possible through the fact that agricultural specialists, other scientists, and practical farmers

B. R. Elliott, '87, after a month at home, returned the first of the week to Nederland, Col.

Secretary Graham has just been elected a life member of the State Horticultural society.

A. O. Wright, '91, resumes his work as teacher near Burr Oak on Monday for a four months' stretch.

P. C. Milner, '91, is reported as being pleased with his position in the Santa Fé railway offices in Topeka.

The thermometer reached its lowest mark of this season on Tuesday morning, registering from 5 to 9 degrees Fahrenheit.

H. E. Moore, '91, spent several days this week with friends at the college. He goes to Portland, Ore., for a year.

There will be no exercises in college on Thursday, Thanksgiving day, except the social for students and members of students' families.

W. A. Anderson, '91, took a rest from his labors as stenographer in the Rock Island offices in Topeka, to visit the college this week.

Mr. Frank Smith, a prominent farmer of Clay county, visited the college today for the first time. He was accompanied by General McDowell, who took care that the visitor should see everything of interest.

THE COUNTRY EDITOR

The country editor, they say,
Has got a snap most every way.
At six o'clock—or just about—
He takes the office ashes out,
Then builds about three fires or more,
And tries to clean the office floor.
He thinks of several items then,
And writes them with his rusty pen.
He grabs the big old awkward stool,
And finds a composition rule;
Goes to his favorite eight-point case,
And sets type at a steady pace.
In just a half hour

A man comes in a-feelin' sour,
And with a voice just like a yell,
He starts to talk and swear like thunder.

"Why didn't your old measly News,"
He says, while wiping off his shoes,
"Have something in about my Phil,
Who visited at Bishop Hill?"

Take my subscription off your books,
Before I go and spoil your looks."
And then the sour-faced talking guy
Departs, and doesn't say "Good-bye."

The editor then let alone,
He hears the office telephone.
"I lost a brindle cow last night.
Put in an ad; I'll make it right.

I don't believe in paper ads,
They're merely foolish little fads,
But put the ad in, anyway,
And wait six months to get your pay."

—A Michigan Editor in the Brooklyn Eagle.

SUNFLOWERS

The front cover of a modern popular magazine is all back—and arms.

Some young men will do well to marry a girl that has brains enough for two.

This might be a good time to revive that old evergreen topic about two living as cheaply as one.

Our old Sunday evening pals, the navy bean and the prune, are rapidly acquiring all the respectability of the olive.

The hardened old bachelor looked over the ball room. "I used to think," muttered he, "that women were fond of dress; but I see no evidence of it now."

Young people who plan to get married while the cost of living is trying for altitude records will do well to eat a good deal before they go to house-keeping.

We modestly own up to being the only column in America that hasn't written a dozen limping paragraphs about the woman representative from Montana.

The man who tries to figure out the Missouri Valley football championship will succeed only in convincing four people out of five that he is a prejudiced fool.

AN UNNECESSARY INVENTION

To keep a woman's hand warm a nickel cylinder which, when heated on a stove, will retain the heat for hours, has been invented.—News story.

A PROOF READER'S BATTLE

Aiming at Calimanesi and Jiblea, Falkenhayn crossed the Baiesti sector, swept beyond Racovitza and Titesti, and took Surdoi, though his forces were thrown back in the Buzeu valley near Kronstadt.—News item.

TO LUCILLE

Blow, blow, thou winter wind,
Thou art not so unkind
As fat has been to me.

For I must study too,
A diet to pursue
That's carbohydrate-free.

—K. C.

GETTING AT THE FACTS

The elementary journalism class was analyzing a story of a romance that began with the rescue of a school teacher from the sea by a traveling man, followed by marriage. A possible question with which to open the story was asked for. A girl in the back seat succeeded with: "Did she do it on purpose?"—Ohio State Lantern.

AMONG THE ALUMNI

Guy D. Noel, '09, is managing a ranch at Yuma, Col.

Miss Louise Walbridge, '14, was a recent college visitor.

Dr. J. Harris, '13, of Havensville was at the college recently.

Miss Edna Jones, '10, is teaching music in the public schools of Hanover.

D. W. Ziegler, '13, is connected with the home study department of the college.

G. C. Smith, '16, of Great Bend spent the week end with college friends.

Miss Wilma Burtis, '16, is teaching home economics in the Sinclair township high school at Lovewell.

D. P. Ricord, '16, leaves this week for Minneapolis, Minn., where he has an advertising position on a trade journal.

J. F. Odle, '94, was chosen county surveyor of Pottawatomie county at the last election. His home is in Wamego.

Miss Lucy Needham, '08 and '11, is principal of the high school at Greeley. Besides the courses in home economics, she is teaching English.

Dr. L. B. Barber, '11, who has been on the island of Guam in government service for the last two years, is visiting with relatives in Manhattan.

Worth Alderman, '13, is with a government valuation party coöperating with the Santa Fé railroad in New Mexico. His address is Amarillo, Tex.

Miss Mary C. Williams, '12, who is on the editorial staff of the Capper publications, has taken out a life membership in the Alumni association.

Wayne Ramage, '16, visited college friends last week end. He left for Kansas City on Monday, where he expects to take a position as an engineer.

Miss Evelyn Potter, '15, visited in Manhattan recently on her return from a month's trip in the southwestern part of the state. She is spending the winter at her home in Barnes.

Harry Noel, '12, and Mrs. Mabel (Etzold) Noel, '12, were here recently. Mr. Noel is in the employ of the Santa Fé railway valuation department, and is stationed at Amarillo, Tex.

Miss Blanche Burt, '12, is teaching in her home town, Shallow Water, Scott county. She was in attendance at the State Teachers' association meeting and at the college Home Coming day.

F. W. Christensen, '00, has resigned his position as nutrition chemist in the New Mexico Agricultural Experiment station and has accepted the position of professor of animal nutrition in the North Dakota Agricultural college.

H. E. Butcher, '14, is in charge of the engineering department of the Mansfield Electric Light and Power company, Mansfield, Ohio. The firm is building a plant to furnish power for manufacturing industries, steel mills, and the cities of Mansfield and Ashland.

Miss Margaret Haggart, '05, professor of domestic science, left Monday for a month's trip through the east and Canada to investigate the work in home economics done in other institutions. She will spend a week in New York and will go to Cornell university, Toronto university, the Michigan Agricultural college, the University of Wisconsin, and the Iowa State college.

William C. Grohne and Mrs. Florence (Deitz) Grohne, '13, and little son spent last week with Mrs. Grohne's parents, Mr. Albert Deitz, '85, and Mrs. Deitz, Kansas City. Mr. and Mrs. Grohne and son are on their way to Baton Rouge, La., where the Grohne Contracting company has a contract for extensive repairs on the federal building.

Albert E. Blair, '99, who is an architect in Lawrence, has recently been elected to the newly created position of city building inspector. He will continue his own business in connection with the new office. Mr. Blair and his wife, Mrs. Jennie (Smith) Blair, student in 1904 and 1905, spent their summer vacation, which extended to five months of pleasure, in Duluth, Minn. He was called home to accept the new position.

DEATHS

MRS. HARRIET NEEDHAM

Mrs. Harriet Needham, aged 79 years, died on October 24 at her home in Lane. She had lived in Franklin county for 60 years. She was the mother of J. D. Needham, '83, of Lane, and Mrs. June (Needham) Carter, '99, of Rantoul.

BIRTHS

Born, to Dr. and Mrs. Harry Whitford, '90, New Haven, Conn., a son, Paul.

Born, to Mr. Arthur Kahl, '11, and Mrs. Goldie (Eagle) Kahl, '11, Boise, Idaho, on October 12, a daughter. Mr. Kahl is in the office of the Idaho highway commission.

CRAN AN ARTSMITH

Everyone knows that the blacksmithing trade is an old, old craft, but comparatively few are aware that there is, or was, a distinct element of art in the old craft. Even today there are artist blacksmiths and well informed blacksmiths attending the convention will tell you that a former Kansas man not only is considered the best blacksmith in the world, but is known as an artsmith. James Cran, now foreman of the Pond Machine Tool works of Plainfield, N. J., is the artsmith. Cran formerly was instructor in iron work in the Kansas State Agricultural college at Manhattan. He won the title of artsmith through his interest in the work of a smith named Louis von Boeckel, a Belgian, who was the most famous blacksmith of Europe and had a little shop in Lier, a village near Antwerp. Cran procured a sample of Von Boeckel's work. Then at his forge that he keeps in the rear of his home he molded into everlasting beauty wreaths of flowers and clusters of grapes that won unstinted praise from well known artists, who admitted that they excelled the work by Von Boeckel. The Belgian smith and his little shop have passed on now, leaving the title of "artsmith of the world" to the former Kansas man.—Topeka Capital.

TO CURRY HORSE DAILY MEANS TIME WELL SPENT

It Gives Animal Excellent Appearance and Also Stimulates Circulation

A few minutes spent daily in currying and brushing a horse is time well spent, in the opinion of David Gray, assistant in animal husbandry in the Kansas State Agricultural college. Aside from giving the animal a clean, glossy appearance, the daily grooming stimulates the circulation.

"The skin is of considerable importance as an excretory organ. Frequent currying and brushing will insure a healthy condition," said Mr. Gray.

"The legs, especially, need daily care. In cold weather if it is necessary to wash them they should be thoroughly dried before being exposed to the open air. Mud should not be allowed to collect on the fetlocks, as it is apt to cause scratches and sores on the heels and about the feet. Sores, scratches, and unsightly spots are often caused by mud and manure settling in the hair, the drying of the mud causing the skin to crack open.

"In harvest time, particularly, the horses should be kept clean, as long hours of work, dust and sweat, and heat all combine to make proper care of the skin a necessity. Sore shoulders and other afflictions, due to lack of care on the part of the owner, have often caused great loss of time and money."

PACKER KEEPS PRICE UP

IT PAYS TO BOX APPLES, SAYS HORTICULTURIST

Strict Grading Is First Essential in Successful Marketing—Growers May Co-operate in Purchasing Machine—How Packs Are Made

That the packer is largely responsible for the increased prices of fruit rather than the producer, is the assertion of Fred S. Merrill, instructor in horticulture in the Kansas State Agricultural college. It pays to box apples, he points out.

"The first essential in successful marketing of apples in boxes is strict grading," said Mr. Merrill. "Grading may be done either by hand or by means of mechanical graders. Hand grading is slower and more inaccurate, but where only a comparatively few boxes are to be handled, is much cheaper than machine grading.

"A sizing board is usually necessary for the beginner in this work. This consists of a board with six holes in it. The first hole should be 2½ inches in diameter, each hole thereafter increasing one-eighth inch in size. After a little practice with the board it can be discarded.

THREE STANDARD GRADES

"The mechanical grader has been improved greatly in the last few years, and has become a necessity in the larger orchards. Where coöperative work is possible a grading machine would be a paying investment in a community in which the growers do not raise a sufficient quantity of apples to buy individual machines. Grading should include both size and color and in order to obtain the best prices, apples should be uniform in both. The three standard grades are extra fancy, fancy, and grade C.

"The packing of apples requires considerable practice before either speed or accuracy can be obtained. The operation, however, can be simplified if the grading is carefully done. The two styles of commercial pack most commonly used are the straight and the diagonal pack. In the straight pack the rows run parallel to the sides and ends of the boxes. The pack, while apparently simple, is actually the most difficult to put up, and will accommodate fewer sizes of apples. The 3-4 and the 5 are the principal packs used in this style.

FRUIT IS EASILY BRUISED

"The disadvantages of this method are that it is difficult to make a firm and tight pack, and that there is a tendency to bruise the fruit, since each apple rests directly upon the apple beneath it. In packing the straight pack the apples of each layer, with the exception of the top layer, should be arranged so that the stems are down. The upper layer should have the stem ends up. The broader surface of the stem end reduces the amount of injury.

"Some form of the diagonal pack usually will be preferred to the straight pack. The apples of the upper layer in the diagonal pack, rest in the open spaces between the apples of the lower layer and thus the injury from pressing is reduced. Of the commercial pack the 3-2 and the 2-2 will accommodate most of the sizes.

GIVES ATTRACTIVE ARRANGEMENT

"The method of packing the 3-2 pack is to place one apple in either corner of the box and one midway between these, leaving two even open spaces. It is important that these spaces be made equal, otherwise the alignment will be disarranged at the other end of the box. These open spaces permit the apple of the size used to slip part way between the other apples, but the spaces are not sufficiently wide to permit the apple to be pressed into them. The second row consists of two apples placed in the open spaces and, as the name implies, the rest of the layers are composed alternately of three and two rows of apples each until the layer is completed. The arrangement of the second row is the reverse of that of the first row and the third row the reverse of that of the second.

"It is easily seen that this style of pack gives an attractive and firm ar-

rangement of the fruit. The number of layers will depend upon the size of the apples, but in packing, the first, third, and fifth layers will be alike and the second, fourth, and sixth will be alike. The 2-2 diagonal pack is used for the larger sizes and in appearance is similar to that of the 3-2. In starting, however, one apple is placed in one corner and the second one is placed half way between it and the other side of the box.

FANCY APPLES ARE WRAPPED

"A well packed box should be slightly higher at the center than at the ends. This is called the bulge, and is essential for maintaining pressure upon the apples so as to prevent them from becoming slack. A bulge of one-half to three-fourths of an inch is usually sufficient. The apples at the ends of the box should be only slightly higher than the ends of the box when placed in the press, or otherwise there will be severe injury when the cover is put in place. If the apples have been well graded the diagonal packs can be made easily and quickly after a little experience.

"The fancy apples—especially those to be shipped—are usually wrapped with paper. The size of the paper varies with the size of the apple. The use of papers gives a tighter pack and bruising is prevented. It also reduces the amount of decay in storage. A cheap means of advertising can be had by using papers marked with the orchard brand on the upper row of apples in the box."

CASH CROPS TRAIN IN KANSAS AND COLORADO

Agricultural Colleges of Two States and Rock Island Railway Co-operate in Presenting Farm Topics

A cash crops special is being run between Colorado Springs and Norton. It started November 21 and will end November 24. The divisions of agriculture, home economics, and extension of the Kansas State Agricultural college, the Colorado Agricultural college, and the Rock Island railway are coöperating in this enterprise.

"Cash Crops for the Great Plains Area," and "Saving of Labor in the Farm Home" are the subjects handled on this special. Dean Mary P. Van Zile and Miss Mary Baird, specialist in home economics, extension division, handle the subjects in home economics, and Charles R. Weeks, superintendent of the Hays experiment station, and G. E. Thompson, specialist in crops in the division of extension, handle the crop topic.

One hour stops will be made at Kansas points along the Rock Island route as follows:

November 23—Kanorado, 11 a. m.; Ruleton, 12:20 p. m.; Goodland, 2 p. m.; Brewster, 4:30 p. m.; Colby, 7 p. m.

November 24—Rexford, 9 a. m.; Selden, 10 a. m.; Dresden, 11:30 a. m.; Jennings, 12:50 p. m.; Clayton, 2:10 p. m.; Dellvale, 3:30 p. m.; Norton, 7 p. m.

SUCCULENT FEED IS GOOD WINTER TONIC FOR FOWL

Beets, Silage, and Alfalfa Produce Satisfactory Results—Other Possibilities

Succulent feed should be given to chickens in winter, because of its value as a tonic, asserts R.M. Sherwood, acting head of the department of poultry husbandry in the Kansas State Agricultural college.

"Beets, silage, and alfalfa may be obtained on most farms," said Mr. Sherwood. "Alfalfa leaves soaked in sour milk are of great value. The milk softens the leaves, and also furnishes valuable food nutrients. It is well for the farmer to plant winter wheat or rye near his chicken house."

Cabbage is excellent as a green feed, in the opinion of Mr. Sherwood. Some persons feed turnips, potatoes, and even apples. Sprouted oats are often used for succulence, but it is not desirable that the sprouting be done in the house because of the offensive odor given off. This necessitates the use of a special sprouter with heater, and adds materially to the cost of the feed.

NOT AS IN OLD DAYS

COLLEGE FOOTBALL IS ON DIFFERENT BASIS FROM FORMERLY

Alumni Recollect Past Times, When Teams Could Play Their Coaches and the Boys Wore Overalls and Jumpers for Suits

The Washburn Ichabods fairly played rings around the Aggies 19 years ago, when the score was 36 to 0. That was in the early days of Aggie football history. Like other institutions in those days, Washburn played her coach, who proved to be the star of the game. Conditions are different now, and the Aggie Wildcats expect to take the long end of the contest against the Ichabods November 30.

The one big fear of the coaches is that overconfidence will be the undoing of the team in the Thanksgiving game.

"Naturally, now that the conference games are over, there is likely to be a slump," said Z. G. Clevenger, Aggie head coach. "Washburn is getting better all the time and doubtless will put up a strong game against the Aggie Wildcats.

MUST KEEP UP FIGHT

"This game is worrying us as much as any other contest in the entire schedule. Ability to win will depend entirely upon the retention of the fighting spirit. If it is possible to keep the men at a high tension up to the time of the final game, there is no doubt of the Aggie victory—but right there is the danger."

The season of 1897 was the first in which the Aggies were allowed to compete with other institutions for athletic honors. Jud Ehrsam of Enterprise, a frequent visitor at the college, was the first football coach.

WAGNER STARTED ATHLETICS

G. F. (Doc) Wagner, now custodian, known to every student on the hill, was manager of the team that year, and it was due to his energy that the Kansas State Agricultural college got a good start in athletics.

"In speaking of athletics, one's thoughts naturally revert to the man who for years has been practically president, secretary, and general manager, G. F. Wagner," was a comment in the old Students' Herald.

At that time little money was spent for athletic equipment. It was not an uncommon sight to see the players dressed in overalls and jumpers and after a particularly hard game in much more scanty attire. Each player purchased his own suit if possible and if not he made it. Men of those days played purely for the love of the game, and never for the long trips, "K" sweaters, and newspaper write-ups.

AHEARN AS FOOTBALL COACH

In 1904, M. F. (Mike) Ahearn, now professor of landscape gardening, came to Manhattan, but it was not until 1905 that he took charge of the team as a coach. He is the man who put the college on the map in athletics. With practically no material at all in 1905 he developed a team that was defeated but twice and in the following year beat the University of Kansas. This is the only Aggie football team that has been able to accomplish that feat.

"Mike" coached until 1910, and it was that year that K. U. refused to play the team. The 1910 football squad was the best and the fastest in K. S. A. C. football history. If it had not been for a defeat by the University of Colorado, under adverse climatic conditions, it would have been an ever victorious team.

INTO MISSOURI VALLEY CONFERENCE

With the building of the new gymnasium modern methods of coaching and training began. This was in 1911. It was in that year that G. S. Lowman came to the college. He was responsible for raising the athletic standard from that of the Kansas conference to the Missouri Valley conference.

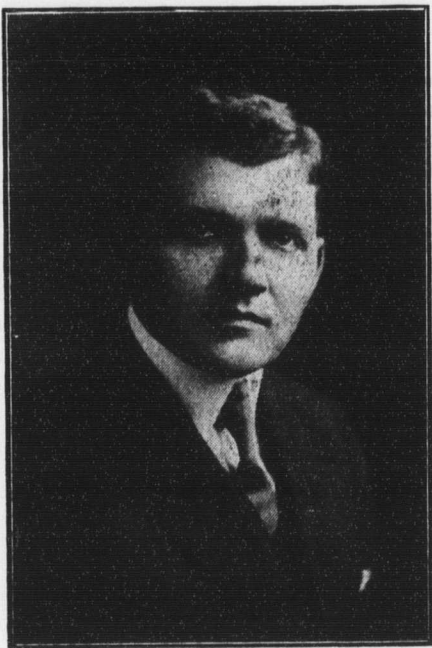
The Clevenger-Schulz combination is proving effective. The team has made a creditable showing, having a claim on second place in the Missouri Valley conference, and having won from the University of Oklahoma Saturday 13 to 12.

WELL ORGANIZED ROAD PROGRAM KANSAS NEED

PEOPLE MUST UNDERSTAND PLANS FOR IMPROVEMENT OF HIGHWAYS, SAYS DEAN EDWARD C. JOHNSON IN DISCUSSING GROWTH OF PUBLIC SENTIMENT ON TRANSPORTATION PROBLEM

That a well organized road building program, the details of which are understood by the people of the state, should be the next step in Kansas road development, was the opinion expressed by Edward C. Johnson, dean of the division of extension of the Kansas State Agricultural college, in an address before the Kansas Good Roads association at Lawrence.

"A sentiment for good roads has sprung up in this state and quite generally throughout the entire country," said Dean Johnson. "This sentiment is not accidental. While one of its principal causes undoubtedly is the general use of the motor car and the desire of the owner-driver for smooth and comfortable roads over which to



DEAN EDWARD C. JOHNSON

travel, its principal cause is the more or less widespread belief that better roads will be financially and socially profitable.

WHERE ROAD MOVEMENT DEVELOPED

"This belief has gained a foothold through an educational process, slow at first but now proceeding with great rapidity. It was slow because the country was occupied with the development of its virgin soil and building of homes, schools, and churches. It has become more rapid as the pioneering period has passed and as facts have become more available, as demonstration roads and bridges have been built, and as the people have begun to realize that if there is to be any considerable development in agriculture, in the maintenance and improvement of homes, schools, and churches, better roads must not only follow these developments, but must accompany and even precede them.

"Many agencies have contributed to the development of the good roads sentiment. The sociability runs and cross country tours so popular a few years ago and still indulged in, demonstrated strikingly to those who took part the differences in the roads in the different areas traveled, the superiority of some roads over others and the desirability of one type of construction as compared with another for motor travel.

PROMOTING TRADE CENTERS

"The good roads associations, many of them resulting from these sociability runs, became boosters for good roads. Commercial organizations wishing to promote certain centers of trade through road meetings and informative articles in the press helped to shape public sentiment. Last but not least, the consistent plugging for better roads on the part of engineers, agricultural colleges, highway departments, the United States department of agriculture, and the agricultural press has resulted in a rapid awakening of public sentiment for better roads. Nor should we omit from this category the good roads crank or the man with the hobby who with vision

and imagination far wider than his neighbors, has pictured to himself a country intensively tilled, densely populated, with well built homes, prosperous villages, and community centers all connected with a network of motor traveled, surfaced roads. He, with other cranks like unto himself, has told his dreams, explained his visions and argued, talked, and planned for better roads in and out of season.

DEMONSTRATION BEST ARGUMENT

"The most convincing arguments for good roads and bridges perhaps have been the demonstrations of effectiveness, of well dragged or surfaced roads and concrete bridges constructed here and there by commonwealth, county, municipality, or community. The 719 concrete bridges built in Kansas according to specifications and estimates furnished by the agricultural college engineers, the 817 bridge inspections made and the 449 estimates of cost furnished by these engineers since the installation of the highway engineering department at the college in 1909, have been potent influences in demonstrating the value of concrete bridges and molding the opinion of the state as to the desirability and practicability of permanent construction.

"Whereas five years ago there were fewer than 500 concrete culverts and 50 concrete bridges in the state, there are now not fewer than 5,000 such culverts and 500 concrete bridges. The sections of demonstration roads which these engineers have supervised, the engineering service which they have rendered on road construction valued at \$827,500 and bridge construction valued at \$2,813,370 and the 1,070 public meetings in behalf of good roads which they have addressed and helped to conduct since 1909 have been potent influences in shaping the sentiment of the state for better roads and bridges. The coastal and interurban surfaced roads surrounding and connecting some of the larger cities of California over which so many Kansans traveled in 1915 brought home effectively the desirability of surfaced roads both for pleasure travel and freight transportation.

BASE EDUCATION ON FACT

"We have demonstrations, precedents, facts and figures on which our educational work may be based. The concrete bridges and gravel and surfaced roads already constructed will serve as demonstrations of road and bridge types so that all who see may understand. Such states as Maryland, Massachusetts, and New York, where thousands of miles of permanent roads have been constructed by state aid and county funds, will serve as precedents of what to follow and what to avoid, while facts and figures showing how road improvement affects the value of land, the efficiency of schools, and social and economic conditions in the country are being brought out every day.

"The average farmer, whose support is wanted and is absolutely essential to any successful program of road building, is not, as many seem to think, a 'tight wad' opposed to road building and improvement. He is naturally conservative as a result of his occupation, training, and experience. He is the most reasonable man on earth and willing to follow his best judgment when facts and figures are presented to him and he understands. When he realizes, as many already do, that good roads will mean a saving in his hauling charges of as much as 11.6 cents a ton a mile as was recently shown for certain counties by the office of public roads of the United States department of agriculture; when he realizes that improved roads will increase the attendance in his schools probably 10 per cent or more as was the case in these counties; when he realizes that improved roads will bring

consolidated schools resulting in better teaching for his children; when he realizes that good roads and motor transportation enlarge his community, promote neighborliness and make co-operation among farmers more common and effective because farmers can come together more often and more easily, he will approve any substantial good roads program that leaders may wish to propose.

APPROVES PRACTICAL PROGRAMS

"He will not only approve it, but help it along with his time and his money. He must be shown, however, by fact and figures where such a program leads. He must assimilate these facts, and time will make that not only possible but certain. When he has done so and is convinced the good roads program will be on with no fear of a let-up.

"But can we then stop in our campaign of education and expect things to run as they should indefinitely? Certainly not. Once the program is on we need to know how to conduct it. We need to be convinced as a people that if 20 to 30 per cent of the roads in any county and in the state are made permanent roads, probably they will handle effectively 80 to 90 per cent of the traffic. We will need to understand road building so as not to over-capitalize any stretch of roads—in other words, not to put more money into the improvement of any strip of road than its ton mileage will warrant.

DETERMINE LOCATION BY TRAFFIC

"We will need to know and to insist that the location of permanent roads shall be determined by the traffic they bear and may bear in the future and not by the whim or influence of some property owner or owners with an axe to grind. We will need to know what type or types of bonds to provide for road improvement. Shall they be long-time bonds to be paid for after the initial improvement has been exhausted or shall they be short-time serial bonds, the first series to be paid after the improvement is completed and all of them before it is exhausted? "We will need to appreciate above everything else that when the initial improvement has been made, only the preliminary steps have been taken and that proper maintenance is absolutely essential. We will need to know as a people that proper road building and maintenance must be delegated to the direction of men trained for the work and that they must be given ample authority to go ahead as their training and judgment dictate.

WILL MEAN BETTER CITIZENSHIP

"Above all, we as farmers will need to know that with the coming of surfaced roads and rapid and easy transportation the increase in potential value of the land will necessitate its more efficient utilization, which in turn will make necessary a well educated, industrious, and progressive citizenship.

"An educational program for good roads in the past has been an invaluable aid to the creation of good roads sentiment. It is rapidly bringing about the crystallization of this sentiment into a public opinion which will result in action. It must go farther than that and serve as a constant guide that our acts may not be wrong or futile and that the program we undertake may be intensely practical and along such lines as will best serve our communities and our state."

PRESS CLUB IS FORMED BY MANHATTAN NEWSPAPER MEN

New Organization Elects Officers and Plans for Social Meetings

Manhattan newspaper men have formed a Press club, one of the few existing outside the large cities. The organization was effected at a meeting held last week.

The officers of the club are: president, N. A. Crawford, professor of industrial journalism in the agricultural college; vice-president, George Brede-man, of the Nationalist; secretary, Fay N. Seaton, of the Mercury; treasurer, D. P. Ricord, of the Chronicle.

The club plans a series of social meetings, the first of which is to be held in the near future.

REST NEEDED BY PLANTS

WINTER IS TIME WHEN THEY SHOULD NOT BE DISTURBED

Temperature Should Be Between 60 and 70 Degrees by Day and 50 and 65 at Night—Guard Against Using Too Much or Too Little Water

"Don't fuss with your house plants until you kill them," is the warning given Kansas housewives and other lovers of flowers by M. F. Ahearn, professor of landscape gardening in the Kansas State Agricultural college.

"Many amateurs," said Professor Ahearn, "do not realize that plant tissues need to rest as do the human tissues, and when the plant stops growing they begin to dig around the roots and then repot the plant. Possibly they kill it. Plants should not be disturbed in winter, for that is their resting time.

STRONG DRAFT CHILLS PLANT

"In caring for house plants keep the temperature between 60 and 70 degrees in the daytime and from 50 to 65 at night. When plants are grown in an abnormally high temperature, with moisture, the growth becomes soft, and they are easily injured. A strong draft, even if only 10 or 20 degrees cooler than the surrounding air, will seriously chill the plants. The result will be that plants like geraniums and heliotrope will turn yellow and drop their leaves. In palms the tips of the leaves will turn brown. To give the proper moisture have a small dish on the radiator, register, or stove and keep it filled with water.

"Do not let plants get too close to the window, for if the leaves touch the glass the plant will at least be chilled if not killed. On cold nights the boxes should be moved away from the window, and newspapers put in front of the glass, leaving a dead air space. The room should be well ventilated at all times. Fresh air should be let in, but care must be taken that the plants are not in a draft."

EXCESSIVE MOISTURE SOURS SOIL

Care must be taken in the watering, for much water will make the soil sour while with too little water the plant will wilt, points out Professor Ahearn. The effect of either will be yellowing and dropping of leaves.

It is easier, however, to drown a plant than to kill it by drouth. No hard and fast rule for watering can be made, for plants may need it twice a day or only once in two days. Rap the knuckles sharply against the pot and if it gives forth a hollow or ringing sound water is needed.

The surface of the soil sometimes indicates the needs of the plant. If it is dry and powdery, a person will be safe in giving the plant water. Never allow water to stand in the saucers or jardinières as it prevents the soil from getting air. Water thoroughly when watering; do not just give the plants half a drink.

WASH DUST OFF LEAVES

To prevent choking of the pores of the leaves by dust they should be washed frequently, according to Mr. Ahearn. When the plant is in a sink or a tub, a hand syringe can be used to spray the foliage without wetting the floor. If this is inconvenient, then carefully rub over the surface of each leaf with a damp sponge. If necessary a little soap may be used.

To keep the plants in good condition the following home made fertilizer may be used: to one gallon of water add eight ounces of nitrate of soda, 16 ounces of monobasic calcium phosphate, and 10 ounces of sulphate of potash. For use dilute it, using one part of this stock solution to 30 parts of water and apply it about once a week.

URGES NEWSPAPER WITH A SOUL AS THE IDEAL

C. A. Kimball Holds That Editor Should Eliminate News He Thinks May Do Harm

The ideal newspaper is not a pitiless purveyor of facts—it has a soul. An ideal for the common good stands

above the right of the newspaper man to publish or the public to know, in the opinion of C. A. Kimball, editor of the Manhattan Tribune, who spoke before the seminar of the department of industrial journalism.

"Do not think this principle will lead to the suppression of the facts the public should know," said Mr. Kimball. "The newspaper should not hesitate to criticize the public officer who is unfaithful to his trust because it will hurt him or his family. There the duty to publish for the benefit of the whole outweighs the hurt that may incidentally be given and in no way compares with the exposure of some private wrong.

"The newspaper with a soul is not corrupt nor corruptible. It uses its power only for what it believes to be good. It may be fanatical about some things. It suppresses news if the publication of such news will destroy happiness. It does not put the young man who has made one mistake on a level with the man who constantly turns to evil deeds. If the publishing of some racy bit of news will mortally hurt some mother's heart, the editor puts the mother heart above any duty he might owe his subscribers.

"If a girl's reputation may be smirched by some thoughtless escapade, he does not believe that his duty leads him to do her such irreparable injury. He knows the terrible power to hurt that there is in the printed word and he knows that there is much hurt done even where the spirit is right and so he takes the general attitude to never needlessly do harm."

Mr. Kimball discussed other types of newspapers than his favorite, mentioning the publication which aims chiefly at attractiveness of make-up, the newspaper which is in the business for the sake of power, and that which tries to present all the news, uncolored and unmodified.

GREEN BUGS DISAPPEAR FROM SOUTHERN KANSAS

Parks Does Not Look for Insects in 1917 Unless from Oklahoma or Texas

No green bugs have been found in the last month in southern Kansas, where the oats crop was destroyed by this insect last May, reports T. H. Parks, specialist in entomology in the division of extension, Kansas State Agricultural college, who has been attending farm and home institutes in southern Kansas counties.

The green bugs last spring injured oats as far north as Marion county on the east and Ellis county on the west of the infested area. There is nothing to indicate that Kansas will be troubled with green bugs in 1917 unless they originate in Oklahoma or Texas.

PHYSICAL TRAINING BECOMES POPULAR SUBJECT IN SCHOOL

Demand Is Growing for Teachers—Special Work Offered in Summer Session

There is a growing demand for physical training teachers, and many who are teaching other subjects would take up this work if they knew more about it, asserted Miss Ethel M. Loring, of the department of physical education in the Kansas State Agricultural college. The college will offer a teachers' course in gymnastics during the summer school to inspire interest in this work.

"The object of the course is to give the girls as much practical work and as broad a knowledge of the subject as possible in six weeks," says Miss Loring.

"We do not pretend that the girls will be qualified physical training teachers after taking the six weeks' course, but many are required to teach it and they should know something about it. If after getting a start they decide that they like the work, they can follow up this course with a special training course or drop it if they find they are not fitted for it.

"Schools that do not have physical training need teachers who are interested in this kind of work and realize the good of it."

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Number 10

PECANS ON WASTE LAND

GROUND NOW UNPROFITABLE MAY BE USED FOR TREES

Prospects Are Good Along Water Courses in Southeastern Kansas, Says State Forester—Improving Yield and Quality of Nuts

That thousands of acres of Kansas land subject to flooding and now agriculturally unprofitable might be made a source of revenue through growing pecan trees, is the opinion of C. A. Scott, Kansas state forester at the agricultural college.

"The possibilities of pecan orcharding as an industry throughout the southeastern section of the state are excellent," said Mr. Scott. "The land along the water courses is well adapted to the growth of pecans and repeated floodings in no way injure the trees after they are a few years of age. If this land were utilized for growing pecans, the loss caused by floods in this section of the state would be reduced to a minimum, and, inasmuch as the flood season usually is in early summer, there would be no injury to the nut crop.

WHERE PECAN TREES GROW

"The northern limit of the natural growth of the pecan is the Marias des Cygnes river and its tributaries, while the western limit is the Walnut river and its tributaries. Under favorable conditions pecan trees attain a large size and produce large quantities of nuts. Some of the largest trees are fully three feet in diameter and seventy-five feet in height.

"In years of heavy production, such a tree produces from 600 to 800 pounds of nuts. During the past 15 years the price paid for these nuts has varied from 7 to 15 cents per pound.

NEED ROOM TO DEVELOP

"There are two ways by which the yield and quality of the Kansas pecans may be increased materially. The first is that of improving woodlot conditions where the pecans are now growing, so as to give the trees more room to develop broad spreading crowns and thus increase their yielding capacity.

"This improvement will be most readily accomplished by cutting out the trees of other species that are interfering with the best development of the pecans, thus reducing the competition for soil moisture and allowing the pecan trees a greater supply of plant food, which will materially increase the size of the nuts grown.

"In thinning the native timber, it will be necessary to exercise care and judgment to avoid possible injury to the pecans. Trees that grow in a dense stand are tall and slender and, if left standing alone, are likely to be broken in a severe wind storm.

DENSE SOD IS DETRIMENT

"Gradual thinning of the stand around such trees permits an increase in the size of the crown, which results in rapid diameter growth and strengthening of the stems. In a few years another thinning should be made, at which time it will be safe to remove practically all the trees on the ground except the pecans.

"A dense sod of grass in a pecan orchard robs the trees of much of the soil moisture and, further, leads to the practice of grazing stock on the ground. This in turn is detrimental because the stock trample the ground to such a degree that it interferes with the aeration of the soil, and causes the premature death of the trees.

"When growing under adverse conditions, the pecan trees, like other species, are subject to insect and fungous attacks.

BUDDING AND GRAFTING USED

"The other method of improving the pecan is by budding and grafting seedling stock with buds and scions of na-

tive trees. This will require considerable time and must be done by skilled operators, but it will ultimately result in the development of improved varieties adapted to Kansas conditions.

"The department of forestry of the Kansas Experiment station has taken up this line of work. Enough nuts have been planted to produce several thousand seedlings, which will be budded and grafted. In this work scions and buds will be used from selected trees growing in this state. The improved stock will be distributed among pecan growers of Kansas for the establishment of pecan orchards or for the improvement of their woodlots.

DEPARTMENT CARRIES ON WORK

"In this work the hearty cooperation of all who are interested in growing pecans is invited. The department of forestry is desirous of obtaining samples of pecan nuts of unusual size, superior quality, or with extremely thin shells, from any place within the state. Persons sending such nuts should definitely mark the trees that produce them, so that a complete record may be secured of all trees of merit within the state. Such samples may be sent to the department of forestry, Kansas Experiment station, Manhattan, Kan.

"Preparation of ground for pecan orcharding, the size of trees to plant, and the manner of planting, should be given careful consideration.

MAY BEAR FOR CENTURY

"The maximum tree growth and early production can be secured only by careful attention and cultivation. A common practice is the orchards of the southern part of the United States is to grow cultivated crops on the land between the rows, leaving narrow strips on either side of the trees to receive a clean cultivation. As the trees approach bearing age, this strip is readily widened and all the land is finally occupied by the trees. Potatoes, cowpeas, and soy beans are desirable crops for such use, but corn is objectionable.

"Trees of some varieties, when grown under favorable conditions, will mature a few nuts by the end of the fourth or fifth season after planting. A general crop can not be expected, however, until the orchard is 10 or 12 years of age. From this time on, the yield of nuts will rapidly increase and when the trees are 20 years of age, a good rate of interest on the investment may be expected. Trees growing under favorable conditions will continue to produce nuts for a period of 100 years or longer."

TO SHOW MONTGOMERY COUNTY POSSIBILITIES IN DAIRYING

College, Farm Bureau, and Railways to Co-operate in Special Campaign

A campaign for the purpose of impressing upon the people of Montgomery county the possibilities in dairying in that portion of the state, will be held December 4 to 9 with the Montgomery county farm bureau, the Kansas State Agricultural college, and the Santa Fe and Missouri, Kansas, and Texas railways coöperating.

Meetings will be held throughout the week at various farm houses and halls in the county. The series will close with a final round-up of those interested Saturday afternoon, December 9, in the Commercial club rooms in Independence.

Speakers for the meetings will be O. E. Reed, professor of dairying in the agricultural college; E. J. Macy of the Montgomery county farm bureau; H. M. Bainer, agricultural and industrial agent of the Santa Fe; and T. M. Jeffords, agricultural and industrial agent of the M. K. and T. railway.

Demonstrations in judging dairy cows will be given at every farm meeting. Stereopticon views will be shown at each evening meeting.

DEGREES SOUGHT BY 70

MIDWINTER COMMENCEMENT PROMISES NUMBER OF GRADUATES

Henderson Martin to Speak on "Choosing an Occupation"—Exercises to be Held in College Auditorium Wednesday Before Christmas

Nearly 70 Kansas State Agricultural college students are candidates for degrees to be conferred December 20. The number of degrees actually granted may be slightly less than this number, as a few of the applicants may be unable to complete their courses entirely by the date set.

Henderson S. Martin, vice-governor of the Philippine islands, will deliver the commencement address. His subject will be, "Choosing an Occupation."

SUPERVISES PHILIPPINE EDUCATION

Mr. Martin, before going to the Philippines a few years ago, had for a long time been prominent in Kansas life, being particularly interested in education. He has supervision of educational work in the islands.

The commencement exercises, which will include music, will be held in the college auditorium.

Following is the list of candidates:

THE LIST OF CANDIDATES

Bachelor of science in home economics—Margaret Isla Bruce, Marquette; Grace Lydia Currie, Manhattan; Mary Rebecca Dunlap, Eureka; Nelle Flinn, Admire; Ruth Esther Frush, Kansas City, Kan.; Elizabeth Emma Gish, Manhattan; Gladys Gist, Manhattan; Bertha Belle Hole, Manhattan; Ruth Amelia Hutchings, Manhattan; Agnes McCord Irwin, Manhattan; Pearl La-Claire Jacques; Hamlin; Nelle Florence Longenecker, Kansas City, Kan.; Reah Jeannette Lunch, Clayton, Mo.; Marie Moses, Manhattan; Hazel Berdella Peck, Manhattan; Olivia Esther Peugh, Hutchinson; Juanite Reynolds, Canton; Margaret Ursula Schneider, Logan; Florence Hazel Smith, Great Bend; Mildred Tolles, Lawrence; Elizabeth Blanche Walsh, Kansas City, Kan.

MANY IN AGRICULTURE

Bachelor of science in agriculture—Harold Hardesty Amos, Manhattan; Bernard Martin Anderson, Manhattan; George Harold Ansdell, Jamestown; George Murray Arnold, Piedmont; Henry B. Bayer, Quincy; Ary Clay Berry, Topeka; Robert Elliott Curtis, Manhattan; William Deitz, Kansas City, Mo.; George Ernest Denman, Manhattan; Frank Harold Dillenback, Walnut; Irl Ferris Fleming, Manhattan; Claude Fletcher, Hiawatha; Elmer Herman Jantz, Larned; Donald Smith Jordan, Topeka; John Kiene, Valencia; Robert R. Lancaster, Nevada, Mo.; Marc Athison Lindsay, Kansas City, Kan.; Lewis Augustine Maury, San Antonio, Tex.; William O'Connell, Coldwater; Raymond Smith Orr, Manhattan; Grosvenor Ward Putnam, Manhattan; Paul Robinson, Eskridge; William Herbert Robinson, Holton; Emmett Warren Skinner, Beverly; Charles George Stiensmeyer, Leavenworth; Byron John Taylor, Chapman; Robert Emmet Terrill, Guthrie, Okla.; Sidney Rendall Vandenberg, Manhattan; Glenn Frederick Wallace, Siloam Springs, Ark.; Walter Harris Washington, Manhattan; Price Harlan Wheeler, Garden City; Raymond Hazzleton Whitnack, Manhattan.

Degree of doctor of veterinary medicine—Richard Clay Chatman, Manhattan.

Bachelor of science in industrial journalism—Bagdasar Krekor Baghigian, Topeka; Albert Ellis Hylton, Manhattan; Annette Woodward Perry, Manhattan.

Bachelor of science—Charlotte Morton, Ellsworth; Harry Fred Vaupel,

New Cambria; Lyndell Porter Whitehead, Walnut.

Bachelor of science in architecture—S. B. Baker, Manhattan; Henry Robert Horak, Munden; R. A. Korsmeier, Manhattan; R. E. Sellers, Emporia. Bachelor of science in civil engineering—C. W. Hickok, New Ulysses. Bachelor of science in electrical engineering—A. J. Herold, Seneca.

EXPECT MANY STUDENTS FOR FARMERS' COURSES

College Authorities Look for Large Attendance at Midwinter Session—Numerous Subjects Offered

Several hundred persons are expected to take advantage of the practical instruction offered in the farmers' short course in the Kansas State Agricultural college from January 8 to March 21. Many subjects pertaining to farm management and practices will be taught, and aside from the regular work of the course it will be possible for the student to select some additional subject in which he is interested such as concrete construction, farm arithmetic, electricity, music, or English.

Some of the subjects in the course are production of improved and more profitable live stock; selection of higher yielding crops with proper rotations; better management of soils with increased productiveness of land; improved administration of farm practice and corresponding higher labor income; control of insect pests and animal and plant diseases; operation and care of gas engines, automobiles, and farm tractors; repair and management of farm machinery and buildings; the breeding up of a profitable dairy herd and the sanitary production of milk, cream, and butter; beautifying of the farmstead and the making of an attractive and convenient farm home; and promotion of greater community responsibility and better rural citizenship.

WHEN FOWL IS TO BE USED DECIDES PICKING METHOD

F. E. Fox Gives Suggestions as to Successful Poultry Practices

Dry picking and wet picking are the two general methods used in dressing poultry, depending upon whether the birds are for future consumption or immediate use.

"Successful dry picking depends on the proper sticking of the fowl," said F. E. Fox, of the poultry department in the Kansas State Agricultural college, "as the longer the bird is left after sticking, the harder the feathers set. Dry picking takes a trifle longer, but if the sale of the fowl is to be delayed for any reason, as by shipment or storing, it should be dry-picked.

"When the fowls are dry-picked they are bled by thrusting a sharp knife through the mouth until the jugular vein is pierced. Blood will immediately begin to flow from the mouth. The brain is then pierced through the eye. This loosens the nerves that have control over the feathers. After this portion of the brain has been paralyzed the feathers readily yield themselves to the hands of the picker.

"There are two general methods of dry-picking poultry, the bench method and the string method. Commercially, the bench method is generally preferred.

"Poultry keeps better if it is not drawn. The head should be neatly wrapped in paper, and the feet left intact.

"If the fowl is for immediate use, it is a trifle quicker to scald it and use the wet method of picking. In this method the 'bloom' is spoiled and the bird will not keep so well. All scalded fowls are immediately drawn. In cold weather one can send the birds almost any distance by parcel post."

DUE TO WINTER CARE

EFFICIENCY OF FARM HORSE DEPENDS ON COLD MONTHS

Dr. C. W. McCampbell Discusses Feeds That Prove Most Economical—Size of Mature Draft Animal Determined by Early Treatment

The efficiency of the farm horse next spring and summer will depend largely upon the feed and care it receives this winter, asserts Dr. C. W. McCampbell, associate professor of animal husbandry in the agricultural college.

"Despite the fact that feeds are high in price, the farm horse must be well fed during the coming winter months," said Doctor McCampbell. "A study of market prices reveals the fact that bran and alfalfa hay are two of the cheapest feeds available when feeding value is considered. Both are well adapted to winter feeding because of the lighter work of the farm horse during the winter season, and because of the cooler weather. This being true, both should enter largely in the farm horse ration this winter.

MAY USE MUCH ROUGHAGE

"At present prices a combination of 6 parts of corn and 4 parts of bran is 20 cents a hundredweight cheaper than corn alone, and has practically the same feeding value as an equal weight of oats. Ten to 12 pounds of alfalfa hay a day in place of prairie hay will enable one to reduce the grain ration approximately 20 per cent.

"Large amounts of roughage, such as corn fodder, cane, and straw, which might otherwise be wasted, may be utilized when alfalfa hay is fed, for the richness of the alfalfa causes a craving for other roughages."

The size of the draft horse will depend largely upon the feed and care that the weanling receives during the first winter, asserts Doctor McCampbell.

VALUE DEPENDS ON SIZE

"In developing the colt, it must be remembered that the feed it gets the first 18 months and especially the first winter determines to a great extent the size of the colt at maturity," said Doctor McCampbell. "The size of a horse determines very largely its value.

"Good breeding gives wonderful possibilities, but it takes feeding if these possibilities are to be fully realized. The best bred colt will be no better than a scrub if fed upon a starvation ration.

"A draft colt makes one-half of its development by the time it is one year old, hence the importance of a good start. The colt should be taught to eat grain before it is weaned, and after being weaned should be allowed a liberal ration of alfalfa or clover hay with other available roughages, such as corn fodder, kafir butts, cane hay, and straw. The colt should be fed sufficient grain to keep it in a good growing and thrifty condition.

COLTS NEED AMPLE EXERCISE

"One should never be able to see a colt's ribs. A ration of from six to eight pounds of grain a day should be fed for each 1,000 pounds of live weight. Oats is an excellent feed but at present the price is so high that it is not practical. A good substitute is corn, 70 per cent; bran, 20 per cent; and oil meal, 5 per cent by weight."

Colts should not be housed too closely during the winter, pointed out Doctor McCampbell. In this climate a shed opening to the south will furnish sufficient shelter for winter.

Colts should have access to a pasture or large lot so as to have plenty of exercise. Where winter pasture such as wheat or rye is available, the feed bill may be cut down considerably.

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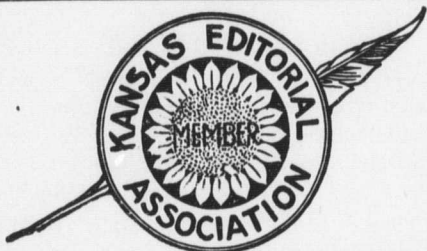
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N. A. CRAWFORD Managing Editor
J. D. WALTERS Local Editor
ADA RICE, '95, M. S. '12 Alumni Editor

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WEDNESDAY, NOVEMBER 29, 1916

KANSAS IN LIVE STOCK

To anyone not directly in touch with the rapid development of the cattle industry in Kansas, the 1916 winnings of Kansas bred cattle at the American Royal Stock show, at Kansas City, came with some degree of surprise. Although only one of 16 states competing in this show, Kansas breeders were able to carry off a large share of the prize money.

Comparisons made by L. B. Mann of the animal husbandry department of the college and covering the first three prizes, the championships, and the grand championships indicate clearly the high position of the state. The total number of individual cattle entries was 572, Kansas exhibiting 61 head, or 10.7 per cent of the whole. This comparatively small per cent of entries, however, won 25.5 per cent of the firsts, 15 per cent of the seconds, 11.1 per cent of the thirds, 25 per cent of the championships, and 12½ per cent of the grand championships. In proportion to the number entered, therefore, Kansas cattle in individual entries won 2.87 times as many firsts, 1.44 times as many seconds, 1.03 times as many thirds, 2.8 times as many championships, and 1.93 times as many grand championships, as all other cattle.

In the carload lot divisions of feeder and fat cattle, Kansas breeders made an even greater percentage of winnings. Out of the total of 61 carloads shown, Kansas breeders exhibited 11 carloads, or 15.9 per cent. This amount of Kansas stock won 46.6 per cent of firsts, 30 per cent of seconds, 25 per cent of thirds, and 50 per cent of championships, no grand championships being awarded in these classes. In proportion to the number entered in carload lots, Kansas cattle won 4.49 times as many firsts, 2.26 times as many seconds, 1.78 times as many thirds, and 5.32 times as many championships, as all other cattle.

These figures demonstrate that Kansas breeders are rapidly developing and are being recognized as leaders in the business. Another gratification to those interested in improved live stock, is the fact that these Kansas exhibitors are all breeders rather than importers or salesmen. The influence of such breeding establishments upon the small herds and large range herds is becoming more evident each year in the rapid improvement of the market cattle.

The fact that Kansas range bred cattle won nearly 50 per cent of firsts and championships demonstrates as nothing else can, that these breeders are improving their herds by the use of purebred bulls and cows. Though the comparisons consider only one branch of the live stock industry, it is typical of the rapid improvement in all branches over the state and speaks well for the establishment of a more permanent and profitable type of agriculture in Kansas.

SENSE AN ASSET

Common sense is the farmer's greatest asset. It implies not only a breadth of view but a practical knowledge of various industries. The general farmer must be, to a great extent, a mechanic, a naturalist, an agronomist, a live stock specialist, and a business man. Yet his understanding of all these lines must be well balanced. He must guard against specializing in one subject to the neglect of the others. If he tinkers with his automobile when he should be cultivating corn, he may eventually have a good running machine, but it is doubtful if he will have much of a corn crop.

Few farmers, it is true, have an equal grasp of, or an equal ability in all lines pertaining to agriculture. It is only natural that they should take greater interest in one division of industry than in another.

Likewise, the student who attends an agricultural college, if his ultimate object is to learn the business of farming, does well to get a proper understanding of values. When he returns to the farm he will have learned a number of things that his father does not know. Yet if his father is making a success of farming, he should not be hasty in condemning his methods. His college training should enable him to improve these methods. He should not be the slave of any one system or branch of agriculture, unless he is certain that greater success will result by adopting it. His technical training should not render him impervious to further improvement. If local conditions demand a different application of science, he should be capable of adapting his knowledge to the change. He should value an idea for what it is worth, no matter from what source it may have sprung. This is only common sense.

There is prejudice among some farmers regarding the practical value of an agricultural education. If there is ground for such prejudice, it is probably the observation of some persons who are as much at sea with knowledge as they are with ignorance. If an agricultural education fails to benefit the student, the failure must rest with the student himself. If he hasn't any sense when he comes to college, he cannot expect to leave with any.

There are many successful farmers who never had the advantage of a technical education, but they have succeeded not because of the lack of such education but in spite of it. The chances are that if they had been more thoroughly educated they would have attained even greater success—and this with a less expenditure of energy.

TRAPPING PROFITABLE

Many people would be surprised to know the volume of business being done in handling furs. Furs of all kinds are in greater demand than ever before.

We ordinarily think of taking furs by trapping or otherwise, as a pioneer occupation. Many of the larger fur-bearing animals become scarce as civilization invades their homes. There are many of the smaller animals, however, such as the muskrat, skunk, civet cat, o'possum, mink, and raccoon, of which this is not true, and it is largely from these smaller fur-bearing animals that our furs are now coming. Boys or young men can make quite a little spending money during the winter season by attending a few traps even in a settled country. It requires skill and considerable close application to successfully take furs, but even the busy schoolboy can manage to put out a few traps and attend them regularly if he is willing to use his time to the best advantage.—Kansas Farmer.

RECORDS BY CLUB MEMBERS

High records were made by the state champions in boys' and girls' club work in the northern and western states in 1915, according to compilations made by the states relations service of the department, which, in co-operation with the state agricultural colleges, directs the club activities.

In the potato-club work 11 state champions made an average yield of 483.10 bushels per acre, at an average cost of \$82.35 and an average profit of \$242.84.

Four champions in kafir and kaoliang clubs made an average of 75 bushels per acre, at a cost of \$18.96 and a profit of \$34.19.

In the home garden and canning club work 10 state champions grew an average of 2,031 pounds of vegetables per one-tenth acre, at an average cost of \$40.64 and an average profit of \$85.12.

In the home canning work three state champions' canning average was 215 quarts of food products, with a total cost of \$22.47 and a profit of \$50.32. These products sold at high prices, due to their exceptional quality as home canned products.—United States Department of Agriculture.

New students drop in occasionally, even though the end of the term be near.

Miss Mary E. Cottrell, '91, reports a pleasant term of teaching in Wabaunsee.

Miss Mayme A. Houghton, '91, begins her teaching Monday next at Cleburne.

F. A. Hutto, '85, writes from Stillwater, Okla., where he is prospering as county attorney.

Mr. Harman, of the Valley Falls Vindicator, visited with relatives at the college yesterday.

F. A. Waugh, '91, agricultural editor of the Topeka Capital, spent Thanksgiving day with his Manhattan friends.

The chemical department has just

THANKSGIVING

Sam Walter Foss

I'm thankful for the glow and grace
And beauty of the Near,
The greatness of the Commonplace,
The glory of the Here.
I'm thankful for man's high emprise,
His stalwart strength of soul,
The long look of his skyward eyes
That sights a far-off goal.
And so I feel to thank and bless
Both things unknown and understood,—
And thank the stubborn thankfulness
That maketh all things good.

SUNFLOWERS

It used to be that the college football teams played their coaches. Now the coaches know better.

The modern party dress is truly the last word in clothing. Modesty prevents us from saying more.

Girls with a bilious amount of white matter and red matter on their faces are never bothered with gray matter within.

We can't decide whether the gentleman who has 72,000,000 eggs on cold storage in Chicago ought to be congratulated or shot.

Life would be a sorry proposition if we refrained from doing all that we should not do and ate just what Earl Flynn prescribed for us.

The romantic damsel who spends her time worrying about deciding upon the sphere of life for which she's fitted has little cause to worry.

We have a great deal of respect for the discriminatory processes of the wife who wears twenty dollar shoes and doesn't allow her husband to eat eggs for breakfast.

Newspaper paragraphs in Missouri are trying to establish the point at which a male quartet ceases to be music. That's easy—it's when the members start to sing.

The most popular artist in America is the man who can paint the greatest number of column inches of back, arms, and chest for magazine covers without getting put in jail.

AT THE END OF THE GOOD ROAD

To see what really happens at the end of the good road, a public road specialist of the department recently had observations made in different sections of the country. The observers noted many country-bound teamsters who drove two loaded wagons, hitched one behind the other, to the end of the good road, and then found it necessary to leave one wagon by the roadside to be returned for later, while all the power of their teams was devoted to hauling a single wagon over the unimproved road.

Farmers bound for the market frequently were seen to haul wood and similar products to the beginning of the good road, there dumping them, and then returning for a second load. When this arrived, the two loads were consolidated and easily hauled by a single team the remaining distance to market over the improved highway.

In one section of the country where oxen are still used teamsters were observed to bring their loads over the dirt roads with two or three yokes of oxen. When the beginning of the good roads was reached, the teamsters would unhitch the extra animals and finish their journey with a single yoke.—United States Department of Agriculture.

The sense of direction in migratory birds is as marvelous as it is mysterious. The familiar inhabitants of our dooryard martin boxes return the next year to these same boxes, though meanwhile they have visited Brazil.—United States Department of Agriculture.

A Real Thanksgiving

American Farming

GRATITUDE is a virtue too often inadequately expressed. However, it does not follow that we are wholly or even seriously deficient in appreciation because of failure to be continually openly acknowledging indebtedness for a multitude of blessings. An individual too quick or too profuse in expressions of thanks runs the risk of being regarded with a bit of suspicion.

In its inner tabernacle the humble soul may daily sing praises for a continuance of blessings and by a predominance of such thoughts develop a beauty and richness which will thrill and inspire when occasion demands that it should be heard. The nobility of our thoughts and not the multitude of our words determines our character. Thanksgiving is more a matter of attitude than of speaking. It is spiritual.

This does not mean that we should be dumb in the presence of an abundance of good things showered upon us by Providence and by friends. Out of the abundance of a grateful heart the mouth should speak. A virtue well developed cannot be stifled—true character speaks through every act when words are scant.

Thanksgiving should be a daily devotion, unmarred by mockery or insincerity. Such devotion was more predominant among our pious New England forebears than with us today. Comparatively scant as were their blessings and grievous as were their privations, they sincerely professed to find much occasion for daily thanksgiving. Even with these devotions a day of special thanksgiving and praise was deemed meet. And thus was born the beautiful custom of our annual Thanksgiving.

FARM VERSUS CITY

The time of year is fast approaching when many a farm boy and girl will start out for the city to spend the winter working in office, shop, or factory. Perhaps you have heard rumors of some such plans in your own household, and perhaps your John or your Mary has answered some of the help-wanted ads in the county-seat or nearby city paper. Well, a winter in town won't do them any harm if their home training has been good and the farm home pleasant.

If the parents have made the farmhouse as bright and cheerful as the average city boarding house, if the girls have had washing machines, running water, acetylene or electric lights, oil stoves in summer, coal stoves in winter to make their work easier and their hours of recreation happier, if the boys have had a well-equipped workshop, modern machinery, good live stock, to work with, and a real if small financial interest in the farm, you needn't worry about their coming back to the farm when the first taste of city life is over. The farm will hold them or get them back if the farm is as it should be.—Farm and Fireside.

A QUARTER CENTURY AGO

Items from The Industrialist of November 28, 1891

C. A. Kimball, third-year in 1890-'91, is teaching near Clarkson.

A number of students ate their Thanksgiving turkey at home.

The football teams played a number of games on Thanksgiving day.

received an imported mill for use in the laboratory. The pattern is one in general use in experiment station laboratories throughout the country.

Our college world was seriously disturbed this week by announcement of the suspension of four students for various periods of time, and the public reprimand of nine others, all for offenses against good order in the vulgar tricks of hallowe'en and misuse of college property, as well as injury to the good name of the college.

Professor Willard gave the usual Friday lecture yesterday, an entertaining and suggestive presentation of the importance of carbon in the economy of our planet. Incidentally, he illustrated the advantages to the world of study in chemistry, which had brought to light the multitude of uses to which carbon is put in nature and the arts. The lecture was illustrated by a collection of specimens to be examined by the crowd of interested students afterwards.

The following graduates graced the Thanksgiving day social with their presence: E. H. Perry, '86, Topeka; H. A. Platt, '86, Leoti; F. G. Kimball, '87, Manhattan; S. S. Cobb, '89, Waggoner, I. T.; Miss Mary Lee, '89, Manhattan; Miss Mary E. Cottrell of Wabaunsee; P. S. Creager of Jamestown, A. A. Gist of Belleville, W. W. Hutto of St. George, P. C. Milner of Topeka, Miss Lillian St. John of Zeandale, Miss Nellie McDonald, Miss Bertha Winchip, Miss Madeleine Milner, Miss Callie Stingley, and D. C. McDowell of Manhattan, all of '91; and the post-graduates from various classes.

AMONG THE ALUMNI

A. F. Kiser, '14, is farming on rural route 2, Geneseo.

Dr. W. E. Simonsen, '12, is located for general veterinary practice at Cherokee, Ohio.

Roy M. Phillips, '14, is instructor in dairy production in the State College of Washington, at Pullman.

G. W. Putnam, '16, is in the department of farm crops of the Michigan Agricultural college, East Lansing, Mich.

Mrs. Carrie (Harris) Totten, '10, of Clifton has sent her check for \$20 for life membership in the alumni association.

A letter from Wilma Evans, '09, tells of her enjoyment of the weekly visits of THE INDUSTRIALIST. She is already planning to return to college for commencement.

Roy W. Kiser, '14, is beef cattle specialist in the live stock extension service of the United States department of agriculture in cooperation with the Louisiana State university at Baton Rouge.

F. A. Smutz, '14, is supervisor of manual training in the Twin Falls, (Ida.) high school. The school is large and unusually well equipped, Twin Falls being located in one of the most extensive irrigation tracts in the world.

Mr. and Mrs. R. E. Hockersmith have announced the approaching marriage of their daughter, Miss Helen Hockersmith, '14, to Mr. Glenn A. Bushey of Salt Lake City. The wedding will take place in Salt Lake City in the near future.

O. W. Weaver, '11, visited the college Monday and Tuesday on his way to Gainesville, Fla., where he will be agricultural editor for the University of Florida. He will spend Thanksgiving day at his old home in Atchison before proceeding south.

F. W. Christensen, '00, was at the college Monday on his way to his old home at Randolph. He recently resigned his position as nutrition chemist in the New Mexico State college to become professor of animal nutrition in the North Dakota Agricultural college.

John M. Scott, '03, animal industrialist in the Florida State Experiment station, is author of one of the feature articles in a recent number of the Florida Grower. The article is entitled, "Essentials for Success in Dairying," and is illustrated with interesting photographs.

Miss Adah Lewis, '07, head of the department of home economics in the Fourth District State Normal school, Springfield, Mo., is delivering a series of lectures on dietetics before the nurses of the Springfield hospital. She gave a similar course at the hospital last winter. Miss Lewis does also considerable extension work in southwest Missouri.

R. E. Hunt, '11, associate animal husbandman in the Virginia Polytechnic institute, coached the team which won first place in the stock judging contest at the Virginia state fair. The Virginia team was more than 200 points ahead of the representatives of the North Carolina Agricultural and Mechanical college, which ranked second.

The Rev. R. A. Esdon, '03, pastor of the United Presbyterian church of Denison, has just completed a three weeks' evangelistic campaign, in which 56 converts were reported. The Rev. Mr. Esdon was assisted by an evangelist, a singer, and personal workers. At the recent Denison fair, conducted as a part of the college extension work, he addressed a large audience on the subject of "Community Welfare."

BIRTHS

Born, to Mr. J. A. Plowman, student from 1892 to 1895, and Mrs. Etta (Ride-

nour) Plowman, '96, Heyburn, Ida., on October 28, a daughter, Margaret.

Born, to Mr. and Mrs. George B. Holmes, '11, of Monrovia, Cal., on October 15, a son, George B.

MARRIAGES

McNAMARA-JONES

Miss May McNamara and Mr. George DeRue Meiklejohn Jones, '14, were married Saturday, November 4, at the home of the bride's parents, Mr. and Mrs. E. J. McNamara, in Kansas City, Mo. Mr. and Mrs. Jones will be at home after December 1 at 1009 East Forty-second street, Kansas City, Mo. Mr. Jones is in the insurance business in Kansas City.

DEATHS

HOWARD N. RHODES

Howard N. Rhodes, '96, died of diabetes at his home in Topeka November 25. He was 39 years of age and had been in the employ of the Santa Fe railway since 1911, at the time of his death being assistant cashier. He had been ill for several months but had been able to work intermittently and his condition was not regarded as dangerous until a few days before his death.

Mr. Rhodes is survived by his wife, Mrs. Wilma (Cross) Rhodes, '04, a daughter, Margaret, and a son, Willard H., by his parents, Mr. and Mrs. W. B. Rhodes; and by a brother, Arthur J. Rhodes. His parents and brother live in Manhattan.

WASHINGTON ALUMNI MEET

The Washington alumni greeted President Henry J. Waters at a luncheon given at the Ebbett hotel Friday noon, November 17. There were gathered 26 loyal Kansas State Agricultural college graduates with H. N. Vinall, '03, as toastmaster to welcome President Waters, Dean W. M. Jardine, and Dean A. A. Potter.

President Waters briefly told of the growth and development of K. S. A. C., and outlined the aims and policies of the institution.

Dean Jardine told of the growth of the division of agriculture and of how Kansas State has been holding her own in the realm of football.

A thoroughly happy bunch bade President Waters Godspeed in his work and hoped to have opportunity to meet him and his associates often in the future. J. H. CRISWELL, '89.

MICKEL TO WASHINGTON

L. B. Mickel, '10, who for several years has been manager of the United Press associations at Kansas City, has been promoted to be assistant manager of the Washington (D. C.) bureau of the same organization. He will go to the capital December 1. The new appointment carries with it a substantial increase in salary, and also affords unusual opportunities for progress in journalistic work.

Mr. Mickel was the first graduate of the course in printing, which preceded the present course in industrial journalism. He was prominent as a student, being for some time editor of the student newspaper. Since his graduation, he has been in newspaper work, most of the time with the United Press, having been located successively in Chicago, Springfield, Ill., St. Louis, and Kansas City. For the past few weeks, he has been organizing the work of the associations in Oklahoma.

BOYS GET INSTRUCTION AND PRACTICE IN STOCK JUDGING

Extension Schools to Have Contests at 14 Points in Kansas

A feature of the one-week extension schools being conducted by the division of extension of the Kansas State Agricultural college at 14 points in the state this year, is the live stock judging contests for boys under 20 years. Horses, beef cattle, dairy cattle, hogs, and sheep are used.

Instruction is given in each class in the morning and the afternoon is devoted to the judging work. Each contestant is required to place a class of animals and to write his reasons for so placing. A credit of 60 per cent is given for placing and 40 per cent for reasons.

DEBATERS WIN AND LOSE

SECURE DECISION HERE BUT ARE DEFEATED AT AMES

Compulsory Arbitration Plan Gets Votes of Judges at Both Places—Further Forensic Contests Are Planned for Rest of Year

Kansas State Agricultural college debaters won a two to one decision from the Iowa negative team at Manhattan, and lost to the Iowa affirmative team at Ames by a two to one decision in the annual clash with the Iowa State college last Friday night. The debates were hotly contested at both places.

The question under discussion was, "Resolved, that the United States government should compel the railroads and their employees to settle their disputes in legally established courts of arbitration." The constitutionality of the matter was waived.

The members of the Kansas affirmative team which met the Ames negative team at Manhattan were Riley McGarraugh of Mulvane, captain, and J. B. Sweet and M. W. Converse of Manhattan.

ARRANGE PENTANGULAR DEBATES

Members of the Aggie negative team which debated at Ames, were L. A. Dubbs of Ransom, captain, H. A. Moore of Manhattan, and A. W. Boyer of Scranton. Don L. Burk, debate coach, accompanied the negative team to Iowa.

Arrangements for the continuation of the pentangular debates were completed after the debate Friday night by the representatives of Washburn college, Ottawa university, the College of Emporia, Baker university, and the Kansas State Agricultural college.

The minimum wage question will be discussed. The question which had previously been decided upon had become unsatisfactory because of legislation enacted.

MANY STUDENTS TAKE PART

Thirty-eight students will debate this year—20 men and 18 women. The men will debate with the State Normal school and in the pentangular contest. The women will debate with the Missouri State Normal school of Warrensburg and with Washburn college. Arrangements are being made for either a triangular or a pentangular women's debate in which several Kansas state institutions will take part.

Eleven men and twelve women were chosen in recent tryouts to complete the 1916-17 debating squad. More than 60 persons competed. Dr. J. G. Emerson, head of the department of public speaking, and Don L. Burk, debate coach, express themselves as well pleased with the talent available.

Following are those who were successful in the tryouts together with the societies which they represent: G. W. Busch, Alpha Beta; Fred Carp, Athenian; Glen Case, Franklin; P. J. Finley, Hamilton; J. Clyde Fisher, Hamilton; C. W. Howard, Athenian; C. J. Medlin, Athenian; H. H. Nelson, Hamilton; A. F. Swanson, Franklin; W. A. Wunsch, Alpha Beta; Miss Ethel Arnold, Browning; Miss Eda Bradley, Alpha Beta; Miss Gussie Johnson, Eurodelphian; Miss Margaret King, Ionian; Miss Lillian Buchheim, Browning; Miss Frances Keneaster, Delta Zeta; Miss Degerstrom, Alpha Beta; Miss Helen Mitchell, Browning; Miss Lucille Norwood, Pi Beta Phi; Miss Lola Sloop, Browning; Miss Blanche Sappenfield, Browning; and Miss Nell Wilkie, Eurodelphian.

SILVER WON'T TARNISH WHERE AIR STAYS DRY

Some Pieces May Be Treated with Shellac, but Others Should Be Wrapped in Unbleached Cotton

Tarnish will never appear on silverware that is kept where the air is dry, according to Dr. H. W. Brubaker, assistant professor of chemistry in the Kansas State Agricultural college.

"Tarnish is a result of the combination of the silver with sulphur," said Doctor Brubaker, "but this combination occurs only in a moist atmosphere. Air contains hydrosulphuric acid

from burning fuels, from cooking and lighting gases, and from decaying organic matter.

"Silverware should be kept out of the kitchen, as vegetables and meats in the process of cooking give off sulphur gases.

"Jewelers often use a thin coating of shellac on their displays in order to keep the silver from contact with the air. Trays, candelabra, and cake and fruit stands may be treated in this way, for the shellac will not easily chip off.

"Some window displays are kept in a dry atmosphere by pumping the air over calcium chloride which absorbs the water, but this method is expensive and impracticable where the silver is in constant use.

"Wool should not be used for wrapping silver, as animal fiber contains a large amount of sulphur. White cloth is often bleached with sulphur and will cause tarnish to appear on silver wrapped in it.

"Soft, unbleached cotton cloth is best for wrapping silverware, which should then be kept in a dry place."

WRAPPING OF CHRISTMAS GIFT EXPRESSES GIVER

Home Art Specialist Suggests White Ribbon and Tissue Paper with a Bit of Foliage

The wrapping of a Christmas gift is an expression of the giver as much as the gift itself, asserts Miss Araminta Holman, instructor in home art in the Kansas State Agricultural college.

"A pretty gift will lose much of its charm if it is wrapped carelessly," said Miss Holman. "As much care should be taken in the wrapping as in the selection of the gift.

"The wrappings should be dainty and inconspicuous, and in harmony with the gift and the sentiment that the giver wishes to accompany the gift. White tissue paper tied with white ribbon with a bit of foliage for color, makes a prettier and neater wrapping than colored paper and colored ribbon. If the gift is to be sent through the mail, the outside wrappings must necessarily be of strong paper, but if tied neatly and securely with tinsel Christmas cord, the package will make an attractive appearance, and at the same time will protect the gift."

Personal touches, such as original sketches on the gift card or a spray of foliage from the region of the giver's home convey a deep sentiment and thoughtfulness on the part of the giver, according to Miss Holman. While holly and mistletoe are the emblematic Christmas foliage, a spray of hemlock, bittersweet, pepper bough, or any pretty native foliage may be used.

AUDITING DEPARTMENT IS SUCCESS IN CO-OPERATION

Grain Dealers' Association Introduces Modern Record Systems

Many requests come to the Kansas State Agricultural college for information as to what cooperative organizations in Kansas may do in order that they may be more effective. One of the best things done at present in the state, according to E. C. Johnson, dean of the division of extension, is the work of the auditing department of the Farmers Cooperative Grain Dealers' association of Kansas.

This is one of the strongest cooperative associations in the state. To help its members it has organized an auditing department which assists the various elevators belonging to the association in installing simple and satisfactory systems for keeping the records of the business. G. W. Lawrence of Larned, chairman of the auditing department, reports that since March he has audited the books of 27 different companies and in some cases has installed entirely new systems.

This auditing department is conducting an educational campaign to impress upon the minds of the managers the necessity of keeping a set of books from which at any time, with a small amount of work, the managers will be able to give a correct and detailed statement of the business entrusted to them.

LABOR SAVING DEVICES TO THE COUNTRY HOME

Are No Longer Exclusive Property of City Dweller, Points Out Physics Professor

One of the chief factors working against the back to the farm movement is the drudgery usually connected with farm life and the consequent reluctance of city men who have lived in the country to leave the modern conveniences and labor saving devices of the city, according to E. V. Floyd, assistant professor of physics in the Kansas State Agricultural college.

"In contemplation of a move to the country it is possible to take the city conveniences back to the farm," said Professor Floyd. "This is being done in many cases where the lighting, the heating, the water supply, and the rapid transportation of the city are being introduced on the farm."

The old kerosene lamp is being displaced by the modern acetylene lamp for each individual room, or in many instances, by the acetylene plant which lights all the farm buildings, points out Professor Floyd. A miniature electric light plant is another possibility. Furnaces, artificial gas plants, and electricity can be used to advantage in heating farm homes.

One of the cheapest and most popular labor saving machines, believes Mr. Floyd, is the gasoline engine, which not only does plowing, hauling, feed grinding, and separating, but also furnishes motive power for washing and churning. The gasoline engine, which does practically all laborious work on the farm, is one of the most important contributions to the back to the farm movement.

By means of the compression water system, drawing, pumping, and carrying water can be eliminated. Scrubbing and washing windows can be done by the hose, which also makes possible an attractive lawn and fresh vegetables from a well watered garden. The inaccessibility to town is overcome by good roads, and slow transportation by the automobile and the gasoline truck. The daily paper is brought to the farmer's door by the rural mail carrier, and the telephone keeps him in touch with news, business, and professional services.

As a result of these city devices taken to the rural districts, a social center is made possible in which the members of the farm home receive practically all the culture and enjoyments of the city family.

COLOR IS FAIR GUIDE TO QUALITY OF HONEY

Alfalfa, White Clover, and Basswood Produce Greatest Quantities—Raspberry Is Best

Honey is judged usually by its color, flavor, and density, asserts Dr. J. H. Merrill, assistant professor of entomology.

"Color is a fair guide. The best honeys are known as the water-white," said Doctor Merrill. "Some of the sources of honey are the clovers—white, crimson, and sweet—alfalfa, goldenrod, buckwheat, heartsease, basswood, and raspberries. Clover, which produces a white honey, is raised along the roadsides.

"The goldenrod is an important source of honey in the fall. This gives the honey a rich golden color. Buckwheat produces dark honey. It is popular, because it blooms late.

"Heartsease is a common honey-bearing plant in western Kansas. Its height is from three to five feet. As a rule, the flowers are purple, but in rare cases white. The honey from this source varies from a light to a dark amber. The flavor is good, but not quite as good as the white honey.

"Basswood furnishes more honey than any other plant except alfalfa and white clover. The blossoms are of a light yellow. In one case 43 pounds of honey were obtained in three days from one hive. The flavor is a strong mint.

"The raspberry produces the finest honey. Its flavor is even superior to the white clover flavor."

TO KEEP PRODUCE COLD

F. S. MERRILL EXPLAINS BRINE PLAN FOR STORAGE

System Avoids Many Disadvantages of Direct Ice Refrigeration—Will Compete Successfully with More Expensive Apparatus

The brine system is one of the most practical methods of cold storage, according to F. S. Merrill, instructor in horticulture in the Kansas State Agricultural college.

"This system when first established," says Mr. Merrill, "consisted of a primary coil placed in a tank of salt and ice. The liquid contained in the pipe was circulated through a secondary coil in the storage room by means of a small pump run by an electric motor."

"Further experiment proved that the use of a pump was unnecessary, because when the primary coil was placed on a higher level than the secondary coil, the brine contained in these pipes produced an automatic circulation. The colder liquid settled to the base of the secondary coil, while the warmer liquid rose in the return pipe to the primary coil, where it was cooled again."

REGULATE TEMPERATURE FROM TANK

"A temperature as low as 5 degrees may be obtained with this system, which is cold enough for any ordinary storage purpose. The temperature of the storage room may be regulated by the amount of salt and ice placed in the cooling tank."

This system avoids many of the drawbacks of the direct ice refrigeration, points out Mr. Merrill. It gives a lower temperature, which is the primary requirement for good storage, and also supplies a drier air, thus reducing the amount of decay. The drier air is secured because the pipes are so cold that the moisture freezes on them.

The material contained in the pipes is a solution of calcium chloride. Calcium chloride is used because it rusts the pipes less and does not freeze so readily as does a solution of common salt or sodium chloride and water. Except in case of leakage the pipes do not have to be refilled.

SYSTEM STAYS IN ORDER

The system is simple in construction and not likely to get out of order, and when once in operation will continue as long as the supply of salt and ice comes in contact with the primary coil. Care should be taken to have the salt and the ice well mixed and not to permit the salt to be spread over the ice in layers.

A crushing machine and an elevator to the tank make the work much easier but these are not necessary. The ice can be crushed by hand and carried to the tank. The larger tanks must be refilled every day in order to have a perfect circulation.

When this system is properly installed and operated it can successfully compete with any of the high price compression and mechanical systems.

LABOR RETURNS DEPEND ON FARMER'S ABILITY

He Must Be Manager as Well as Workman, Points Out Rural Economics Specialist

Labor is a large item of expense on the farm. This labor expense will bring returns in proportion to the efficiency of the farmer, both as a manager of farm operations and men and as an individual workman, according to Theodore Macklin, instructor in rural economics in the Kansas State Agricultural college.

"Every farmer is a manager, whether it be in the supervision of employed labor or in the direction of his own efforts. Nearly every farmer, however, is an employer of labor at some season of the year. This makes it of great importance that the farmer possess the qualities of a good manager. This implies ability in planning and directing labor as well as in selecting the right man."

"On the farm as well as in the cities, there is a great variation in the effi-

ciency of the individual workman. Yet on the farm there is greater difficulty in superintending labor. Farm work requires individual responsibility. The farmer cannot always be at hand to direct his employees. Hence he can afford to have in his employ only those men who have a sense of responsibility, and who are willing to cooperate with him in his work. A farmer cannot expect to obtain this kind of workman unless he has some knowledge and understanding of human nature.

"Whether the farmer employs labor or not, whether his work is the work of supervision or of personal industry, he must plan his work in such a way that all efforts will be productively employed throughout the year. Since labor is such a large item of expense, this point should be emphasized. If he does not appreciate the value of system in his work, he cannot expect satisfactory results no matter how efficient his workmen may be."

"His system of management need not be a complicated one. It should be so arranged that all workmen will be profitably employed not merely on sunny days, but on rainy days as well—throughout all the seasons of the year. To do this calls for judgment and foresight and a moderate amount of thinking."

"It is not enough that the farmer be merely employed. His efforts should be directed to the most productive combination of enterprises. In other words, profits are the aim of the commercial farmer. For instance, he may reclaim waste lands or improve the fertility of his soil, but if the ultimate return does not give a profit above the costs of such efforts, he will have toiled for nothing."

FARMERS WANT DEFINITE PROGRAMS FOR MEETINGS

Extension Division Has Many Calls for Pamphlet of Agricultural Outlines

Definite programs for meetings of farmers' organizations are in demand. A pamphlet prepared by the division of extension, Kansas State Agricultural college, containing nine outlines suitable for monthly and semi-monthly meetings has been adopted by many local granges and farmers' unions in the state.

These program outlines were prepared as a guide for the regular meetings of the local farm and home institutes conducted in connection with the division of college extension, and are recommended for the educational meetings of granges, farmers' unions, and other organizations that wish to develop this feature of their work. The subjects outlined are "Beef Production," "Soil Cultivation and Management," "Highway Improvement," "Farm Accounting," "Cereal Crops," "Horticulture," "Horse Power on the Farm," and "Farm Buildings." Bulletins dealing with the important phases of these subjects are obtainable on application.

ONE CLUTTERED FARM WILL HURT WHOLE NEIGHBORHOOD

Autumn Is Time to Put Premises into Orderly, Attractive Condition

A general cleaning up of the farm premises in the fall is advisable when they have been neglected during the busy summer season, asserts W. E. Grimes, assistant professor of farm management in the Kansas State Agricultural college.

"It is to the farmer's interest to keep his premises clean and orderly at all times. The whole community suffers from an esthetic and business standpoint if one farmer neglects this important duty," said Mr. Grimes.

"A farm cluttered up with useless wornout implements or rubbish left from repairing fences and buildings, will spoil the appearance of an otherwise attractive home."

"If the farm and premises are put into good shape in the fall, there is usually less for the farmer to do in the spring. The machinery should be put away in good repair so that it will be ready for use when needed. Things that are not needed during the winter, can be packed away in a convenient place."

NO DRUG CURES COLDS

PREVENTION IS MOST IMPORTANT, SAYS EXPERIENCED NURSE

Exposure, Fatigue, Overeating, and Other Abnormal Conditions Favor Development of Disease—Air in Rooms Should Be Kept Moist

Prevention is better than cure in case of a cold, according to Miss Loula E. Kennedy, instructor in domestic science in the Kansas State Agricultural college, who was formerly nurse in charge of the Grenfell hospital in Labrador. No drug is an absolute cure.

"After a cold gets a firm hold on one there is not much to be done to prevent it from running its course," said Miss Kennedy. "The thing to do is to keep the body in such a condition that the cold will not take hold."

"A cold is a germ disease and its development is favored by undue exposure to cold, by fatigue, by improper sleep, and by overeating. One should keep away from the germs by avoiding direct contact with persons who are suffering with this disease and those who are careless about coughing and sneezing without using their handkerchiefs."

HYGIENIC LIVING NECESSARY

"One must live hygienically in order to keep the body in a good condition. Hygienic living means proper food, clothing, exercise, rest, plenty of fresh air, and good habits generally. When one is fatigued or worried, or when prolonged chilling or indigestion disturbs the system the vitality is lowered and the way is made easy for the development of the germ. Clothing should be neither too warm nor too cool. Too much clothing induces excessive perspiration, which eventually will cause chilling of the body."

"It is advisable to harden oneself to cold but care must be observed not to overdo the matter. Because a little hardening will do good it does not necessarily follow that more will do better. The temperature of the living room should never be kept so low as to chill the occupants. Special attention should be given to keep the air in this room moist, as the drying of the mucous linings of the air passages causes them to crack and allow germs to enter."

WHEN COLD IS CONTRACTED

"A cold may be contracted in spite of these preventive measures. Then the body must be given a chance to cure itself. This necessitates even more careful living. Drugs can only remove conditions standing in the way of nature's cure. They are all right if prescribed by a physician, but no drug is known to be an absolute cure for a cold."

"Home care consists of removing all strain upon the body. One should exercise little at first, to avoid overtaxing the system. 'Stuff a cold' is not a good rule for it may cause indigestion. A hot bath and hot lemonade probably will prove beneficial if given early and if the body is not chilled by contact with a cold bed afterward. Nothing should be done that will in any way chill the skin."

"Colds should never be neglected. 'Only a cold' too often expresses the attitude. Colds pave the way for pneumonia and other serious diseases."

PLANS SHORT COURSES IN RURAL ENGINEERING

College to Give Special Work in Traction and Gas Engines, Concrete, and Road Construction

Short courses in traction engines, gas engines, blacksmithing, machine shop work, and other subjects in rural engineering are expected to bring more than 300 students to the Kansas State Agricultural college January 8 to March 21. Last winter more than 200 persons were enrolled in the rural engineering courses as compared with fewer than 100 in 1915.

Of those who completed short courses in 1915 and 1916 some have increased the yield of their farms by the use of traction engines, while others have increased their earning capacity by

working as experts for farm machinery concerns, in automobile repair shops, or as contractors.

The course in traction engines includes instruction in the handling, repair, and manipulation of steam traction engines, gas engines, and gas traction engines; blacksmithing; machine shop work; and drawing. Opportunity is also given to take electives in such agricultural subjects as crops, live stock, and farm management. Those desiring electives in practical electricity, carpentry, or power farming machinery, will be given an opportunity to take such subjects.

The short course in concrete construction is designed for builders, contractors, farmers, and others who wish to do their own concrete work or to increase their knowledge of this subject. The course in shop work is intended for those who wish to gain a working knowledge in general shop practice. This course includes instruction in blacksmithing, foundry, shop work, carpentry, and wood turning.

A ten-week short course is also offered in road building, irrigation, and drainage for the benefit of county engineers and surveyors.

NOW IS TIME TO GET RID OF KANSAS PRAIRIE DOGS

Poisoning Is Best Method of Extirmination, Says Doctor Dice

Now is the time to poison prairie dogs, according to Dr. Lee R. Dice of the Kansas Agricultural Experiment station.

"Poison has proved to be the best and cheapest method of extermination," said Doctor Dice. "In late fall, winter, or early spring, in mild periods of weather, the animals come out of their burrows, and can be poisoned easily. Prairie dogs usually will not eat poisoned bait when grass or other green vegetation is available."

The experiment station prepares a poison which for many years has been used with great success in killing the animals. The poison is sold at cost. It requires only to be mixed with wheat or kafir to be ready for use. Further information may be obtained from the experiment station.

SKUNK WILL BE BIG FACTOR IN SUPPLYING FUR MARKET

Presents Possibilities for Domestication, Says Professor of Zoology

That the skunk will be an important factor in supplying the fur market in the future, is the opinion of Dr. R. K. Nabours, professor of zoology in the Kansas State Agricultural college.

"Wild fur-bearing animals are becoming so scarce that people everywhere are concerned about the probable sources of fur," said Doctor Nabours. "Raising the wild fox in Canada is being tried but the output of fur is insufficient to supply the full demand, and the process of raising the animals is extremely expensive. Karakule sheep afford a good substitute in quality but not as yet in quantity because of the difficulty in importing them from Bukhara."

"The skunk presents, perhaps, the best possibility for domestication and breeding of any fur bearing animal. It is easy to raise in captivity, eats almost anything, and becomes surprisingly tame, even making a desirable pet. The musk glands are easily removed when the animal is young, so that the offensive odor is eliminated."

The zoology department is undertaking some preliminary experiments in order to find out the best methods of raising skunks, their heredity, habits, and the best varieties to use. Because of the fact that the experiments are yet in their infancy the department is not ready to give out any complete rules for skunk raising.

The experiments, as far as carried out, indicate a considerable future for this industry. More than 50 persons in Kansas have already made a beginning in skunk breeding. Members of the United States biological survey have for years been advocating experiments along this line.

DON'T FALL FOR VERSE

HENS RESPONSIVE TO OTHER THINGS THAN FARM POETRY

Farmer Who Raises Chickens as Side Line Had Better Keep Small Number, Advises Specialist—Feeds Best Grown on Farm

"The cat produces fiddlestrings, The fish produces glue, The hen produces eggs and things—I don't care—do you?"

—Harry Persons Taber.

Too many people who try to raise chickens agree with Mr. Taber, think poultry specialists. Farm poets have composed a good many heroics about the lay of the speckled hen, but poetry alone is not sufficient to induce the hen to lay profitably. To pay for her keep she must have constant care and attention, both as to food and as to shelter, asserts T. S. Townsley, assistant in poultry husbandry in the Kansas State Agricultural college.

TIME AND LABOR NEEDED

"The more chickens the farmer raises," said Mr. Townsley, "the less will be his profit on each hen, unless he is willing to use the extra time and labor necessary to produce satisfactory results. There is money in chickens, just as there is money in hogs or cattle under favorable conditions, but the farmer who raises 500 chickens, when he has accommodations for only 50, would be better off if he did not raise so many."

"A hen cannot be expected to attain marketable size on a diet of gravel and straw; nor can she be expected to lay eggs if compelled to roost in trees. Under such conditions it is doubtful if 500 hens will lay as many eggs as 50 hens which are given proper feed and intelligent management."

SOME ON EVERY FARM

"The farmer who raises chickens only as a side line, is more likely to realize a greater profit from a few hens, than from a great number. Poultry production on a large scale is a highly specialized business, and there are few farmers who have the necessary qualifications or enough spare time to attend to the management."

"There are few farms where the conditions are such that no chickens whatever can be raised. The farmer should at least raise enough chickens to consume the waste products—such as skim milk and table scraps."

PER YEAR—144 EGGS

When the waste feed has to be supplemented with grain that has a market value, the farmer must give more attention, not only to the poultry business, but to the growing of proper feed crops. The cheapest feeds are always those which can be grown on the farm, points out Mr. Townsley. If the farmer has to buy feed he will have a smaller margin of profit. In any case feed should not cost more than \$1.25 a year for each hen, and on this investment there should be a profit of at least \$1. To produce this return, figuring from the standpoint of current prices of eggs—the hen must lay not less than 12 dozen eggs a year.

Grain feed alone, is not a balanced ration for the production of eggs. The reason the farmer loses out on his poultry in winter, is chiefly because the chickens do not get enough animal food such as skim milk and meat scraps, which are essential to the production of eggs.

WHY THEY LAY IN SUMMER

In summer, however, there is generally a plentiful supply of animal food in the form of worms and bugs which the chickens obtain. This accounts to a great extent for the increased production of eggs in summer.

In winter the problem of shelter is of importance—generally in proportion to the size of the flock. Yet a good henhouse need not cost more than \$1 a hen. If the farmer attends to the construction himself it need not cost as much. The chief requirements of a good building are that it be dry and free from drafts. It should face the south. Ventilation may be obtained by the construction of canvas flaps which can be raised and lowered at will.

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Number 11

MOVE TREES IN WINTER

TRANSPLANTING IS PRACTICAL IN COLD WEATHER, SAYS FORESTER

Trench Must Be Dug Before Ground Freezes—Fall Planting Is Undesirable—Logical Time of Year for Pruning Approaches

Transplanting large trees is practical in winter, according to Charles A. Scott, state forester.

"A trench is dug around the tree to be moved in a period of weather when the ground is not frozen," said Mr. Scott in describing the proper method of transplanting. "The ball of earth containing the roots, is allowed to freeze solid. Then tree and ball of earth, containing from one to five tons of soil, are transferred to the new location. A derrick is commonly used in lifting and placing the tree.

"Great care must be taken in handling the tree to avoid bruising the bark. The hole into which it is to be set should be dug at some convenient

"Trees should be pruned with a sharp knife or saw, and the wounds painted at once to avoid fungous infection. It is best to use white lead, asphaltum, or coal tar as a disinfectant.

"The pruning of shade trees differs materially from the pruning of fruit trees. The object in trimming shade trees should be to carry the crown high enough so that it will not interfere with the use of walks and yards. The trees should be symmetrically developed, with well balanced crowns."

SHOULD BE STARTED EARLY

Pruning should be begun early in the growth of the tree, according to Professor Scott. A little pruning each year is vastly more important than a severe pruning after the tree has been neglected for a number of years.

In early pruning all tendencies to develop a crotch should be corrected. The longer this is delayed the more difficult it is to develop a well balanced crown.

DO NOT CROSS BREEDS

SUCCESSFUL POULTRYMEN SEEK FOR PEDIGREE AND UNIFORMITY

Wallpaper Effect in Chickens Pleases Nobody Except Originator, Says Specialist—Flock of this Character Lacks Market Value

Poultrymen with an eye for color, who cross the different breeds of chickens merely to produce a wallpaper effect, may have artistic sense but they show little poultry wisdom. Pedigree and uniformity are as important in poultry as in other farm stock, according to T. S. Townsley, assistant in poultry husbandry in the Kansas State Agricultural college.

"Nothing is to be gained by crossing the different breeds," commented Mr. Townsley. "The result is always a mongrel bird, which has little to recommend it but a splash of color. This might appeal to some poultrymen who have a taste for variety, but it is not showing good poultry sense.

CHICKENS APPRECIATE UNIFORMITY

"A flock of chickens in which no special breed predominates, rarely has the market value of a uniform flock, especially when the poultryman desires to sell his chickens for breeding purposes. There will be no demand for either the chickens or the eggs, aside from the general market requirements. He himself, although he may favor the mongrel stock, could hardly be induced to pay a fancy price for a setting of eggs, when he is not positive that two eggs in the setting will hatch the same kind of chick.

"Again, a flock that is uniform in type will generally do better than a mixed flock. This probably is due to the fact that a poultryman will, as a rule, take more pride and a greater interest in a flock which presents a uniform and attractive appearance. Mixed breeds are inclined to be more combative, since they recognize in each other nothing but contrast and inharmoniousness, hence a possible enemy. Even chickens themselves appreciate uniformity.

KEEP OBJECT IN VIEW

"Uniformity may be obtained either by grading up a mongrel flock or by purchasing and breeding nothing but a standard breed. Before the poultryman attempts either, however, he should have some object in view—the production of a meat type, an egg producing type, or a dual purpose type. Fancy show birds are not limited to any one breed, but are found in any of the standard varieties.

"There are several good dual purpose types of chickens which are valuable not only for egg production, but for meat purposes as well. Among these may be mentioned the plymouth rock, the Rhode Island red, the wyandotte, and the Orpington. The dual purpose breeds of poultry are more successful than the dual purpose breeds of other farm stock.

TO GRADE UP FLOCK

"Having decided what variety or type of chicken will best suit his purpose, the poultryman should stick to it. Only in this way can he create a demand for his poultry and attain anything like permanent success.

"The poultryman, however, who already has a variety of crossbred chickens, can attain good results by a little systematic grading. His first step should be the procuring of a few standard bred male birds. Then by eliminating the inferior hens he eventually will have a flock which will be somewhat uniform, but even then the improved grade of chickens will never attain the perfection or the value of standard bred fowls. They will always be classed as grades, and as such will never have any value above market prices.

"In fact, grading has little to recommend it, since standard bred chickens can be purchased at reasonable prices. A few settings of eggs, a few hens, and a male bird, all of a standard variety, will form the basis of a valuable flock of chickens.

"This does not mean that grading should be disregarded altogether. No matter to what standard of perfection a flock may attain, there are always a few inferior birds to be found. These should be eliminated.

"There are several ways in which the laying hens can be distinguished from the non-layers. Active, healthy hens that mature early have bright red combs, are generally the best layers, but the only sure method of selecting the layers is by using the trap nest. This requires constant attention, however, and hardly can be recommended to the farmer or the poultryman who has other duties."

ATHLETIC CONFERENCE AT COLLEGE ON FRIDAY

Missouri Valley Coaches and Faculty Representatives to Meet—Presidents and Boards to Kansas City

The semiannual conference of faculty representatives and coaches in the Missouri Valley Athletic conference will be held at the college Friday. Representatives will be present from Drake university, the Iowa State college, the University of Kansas, the University of Missouri, the University of Nebraska, Washington university, and the agricultural college.

On the following day will be held the fifth annual meeting of the presidents and governing boards of the institutions comprising the conference. This meeting will be at the Muehlebach hotel, Kansas City. Dr. H. J. Waters, president of the conference, will preside. There will be addresses by the presidents of a number of the institutions on important subjects connected with college and university administration.

HAMILTON FARM AND HOME INSTITUTE BRINGS OUT 400

Organization Pays \$219 in Agriculture and Home Economics Premiums

The recent annual meeting of the Hamilton farm and home institute was attended by 400 persons. One hundred seventy members were enrolled and \$219 was paid out in premiums for agriculture and home economics.

The meeting was held in cooperation with the extension division of the Kansas State Agricultural college. Carl P. Thompson and Miss Winifred Fortney of the division of extension were the college speakers present. Of those in attendance 250 were men and 150 were women. The work of the women's auxiliary was a big factor in the success of the institute.

WHY CORN IS INADEQUATE AS EXCLUSIVE DIET FOR ANIMAL

Doctor Hogan Contributes Study to Journal of Biological Chemistry

"The Nutritive Properties of Corn" is the title of a scholarly article by Dr. Albert G. Hogan, of the department of chemistry in the Kansas Agricultural Experiment station, in the current number of the Journal of Biological Chemistry.

Doctor Hogan takes up in his paper the probable reasons for the inadequacy of corn as an exclusive diet for growing animals. He deals with the adequacy of the inorganic constituents and of maize proteins, and also with the presence of growth accessories. Though the study is a preliminary one, it is accompanied by elaborate tables based on experiments conducted at the college.

WOULD PAY BUREAU COST

PROFIT PRODUCED ON SINGLE FARM COVERS ANNUAL EXPENSE

Enterprise Proves Investment for Kansas Counties—Orcharding, Sweet Clover, Silo Filling, Household Economics, and Other Subjects Are Handled

That the farm bureau is an investment for a county and not an expense, has been clearly demonstrated. In some cases a single farm has profited enough in dollars and cents to pay the entire cost of the bureau for a year.

In Allen county a 10 acre orchard, which the purchaser intended to dig out, was at the suggestion of the county agent pruned and sprayed. In a single season it netted the owner \$1,476.

Sweet clover used as a green manure crop in that county has increased the yield of corn an average of 19 bushels an acre on several farms, and has furnished from three to five times as much pasture an acre as native grass.

By carefully studying comparatively the methods of filling a large number of silos, changes were suggested in the organization and management of crews that saved many silo owners from 25 to 50 cents a ton on their filling expense.

One mother-daughter canning club in Leavenworth county—a farm bureau enterprise—canned almost 10,000 quarts of vegetables, fruits, and meats. Drainage systems have been worked out on a large number of farms in the county, reclaiming otherwise valueless land that is now worth several thousand dollars.

Variety tests of the wheat grown in Leavenworth county showed that Currell outyielded other varieties an average of 5½ bushels an acre in that county. The substitution of this variety for poorer producers is adding materially to the profits of many Leavenworth county farms.

On 16 Leavenworth county farms, plots of ground were sown with oats treated with formaldehyde for smut control, and similar plots were sown with untreated seed. The average loss by smut on plots untreated was 2 per cent, while on the treated plots the loss was too small for figures.

Leavenworth county grows 15,000 acres of oats, and the loss from smut amounts to nearly 300 acres of that area each year. Farmers in that county plow, prepare, sow, and harvest that many acres of oats each year and get nothing but the straw for their work. The farm bureau has shown how this loss may be prevented, and an unusually large number of the members are now saving the grain which was formerly lost.

POTTER IS RE-ELECTED TO IMPORTANT OFFICES

Dean of Engineering Holds Secretaryship of Strong National Organizations—Kansas Men Succeed in East

A. A. Potter, dean of engineering in the Kansas State Agricultural college, was reelected secretary-treasurer of the Land Grant College Engineering association and secretary of the engineering section of the American Association of Agricultural Colleges and Experiment Stations.

Dean Potter has returned from the east, where he attended meetings of these organizations and visited also manufacturers who are employing former students of the division. He found that the engineering graduates of the college stood exceedingly high, a foreman for the Westinghouse Machine company stating that two of the college men were the best whom he had ever had in his work.



TRANSPLANTING A TREE IN MIDWINTER

time when the ground is not frozen. The soil thrown out should be covered with manure to prevent freezing, so that it may be used for filling in about the roots when the tree is set in place.

MAKE TREE STAND ERECT

"Caution must be exercised in setting a tree to see that it stands erect and that the soil is uniformly packed about the ball of earth containing the roots to prevent the tree from settling to undesirable angles. To accomplish this it is advisable to keep a stream of water running into the hole while it is being filled in. February and March are the favorable months for work of this kind."

Fall planting for any kind of tree is a waste of time, work, and money in Kansas, according to Professor Scott.

Fall planted trees are subject in dry winters to drying out by alternate thawing and freezing. Moisture is also carried off by drying winds in the winter months.

ESPECIALLY HARD ON EVERGREENS

Young trees give off moisture through small openings or pores in the bark, called lenticels.

Trees that are transplanted in the fall do not develop a new root system until the following spring. Consequently the sap is carried off in dry winters by alternate thawing and freezing. This causes the tree to perish. This is doubly true of evergreen trees because they are in full foliage the year round. They give off moisture through the stomata, the breathing pores of the leaves. In more humid regions fall planting is practical because there is little danger of excessive drying.

SPRING PRUNING CAUSES BLEEDING

The logical time for pruning trees is in the late fall or early winter, asserts Professor Scott.

"Trees that are pruned in the spring are likely to bleed," said Professor Scott.

DON'T MAKE TREE TOP-HEAVY

Avoid carrying the crown too high and producing top-heaviness in the early development of the trees, advises Professor Scott. The limbs should be cut close to the trunk to avoid having stubs sticking out on the trunk.

Never pollard or cut the tops out of old trees with the hope that they will develop new tops much more dense than the former. Cutting off large limbs in a tree results in its dying back several inches and in subsequent development of fungous growth which will follow down into the living wood, ultimately causing the heart of the tree to become rotten. The life of the tree is thus shortened by a great many years.

BAGHDIGIAN TELLS KANSANS OF ARMENIAN EXPERIENCES

College Man Delivers Lectures on Conditions in His Native Country

B. K. Baghdigian, who is a candidate for the degree of bachelor of science in industrial journalism in the Kansas State Agricultural college, returned from a lecture tour. At Eskridge he delivered his lecture, "The Most Tragic Story in Human History," an account of the present situation in Armenia, and "Experiences in the Massacres of 1895-'96." The latter is the story of the Turkish persecutions of the Armenians, during which Mr. Baghdigian was taken captive and released only after the payment of a large ransom.

At Louisville, under the auspices of the Community club, he delivered his lecture, "From a Turkish Hell to an American Heaven." This lecture is largely autobiographical, being the personal experiences of Mr. Baghdigian, both as an Armenian and as a naturalized American citizen.

Mr. Baghdigian is a fluent and convincing speaker. He is at present engaged as a lecturer by the social service department of the Kansas Farmer.

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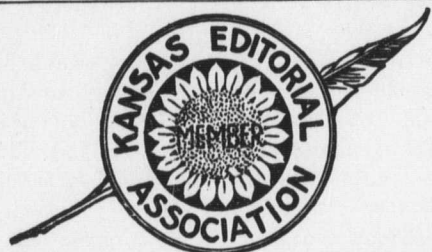
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WEDNESDAY, DECEMBER 6, 1916

SOMETHING TO LEAD WITH

The division of home economics should be congratulated on securing Charlotte Perkins Gilman for the two addresses which she made this week. The important thing in this connection is not whether a majority who heard the speaker agreed or disagreed with her. The important thing is the fact that the students of the college had an opportunity to hear presented effectively a point of view with which most of them had been probably unfamiliar.

The college student, if he or she is to be a leader at any time in the future, must understand the movements, the interests, the principles, the ideals, of various groups of people. The time is fast passing when leaders can present conventional nothings and get anywhere with them. The leader has got to have something to lead with.

AN INVESTMENT EACH YEAR

"Things are so expensive now, and this will be just an added expense." This is the conventional comment when anything new, particularly of a public or coöperative character, is proposed.

It was not unusual that this comment was made when the farm bureau plan was first suggested. It cost money, and a great many people felt sure that they would not get the money's worth from the work of the bureau.

One doesn't hear the expense argument any more in connection with the farm bureau—at least, among persons who are informed as to what farm bureaus do. In not a few cases a farm bureau has paid its annual cost in the added profit that has come to a single farmer. In numerous other cases the substantial saving in labor and money effected for the members of the bureau has been many times the expense of the bureau.

An important feature of these savings, too, is that they do not stop with a single year. The same savings should be realized every year, thus constantly more than covering the expense of the bureau. At the same time the bureau will go on with further investigations and demonstrations which will add substantially to the farm profits. What the farm bureau does is to form each year a new investment, on which the farmer can realize for years to come, while he continues to realize on the investments that have been formed in all preceding years.

KANSAS POETRY BY A KANSAN

Poetry has not been a main interest of Kansas. The editorial, the essay, the short story even, have been written much oftener than the poem.

This is not strange. Kansas was settled by people who put moral and economic issues first. And conditions were such that there was little time for anything else.

In the last few years, however, there has been a turning to poetry, as to

other art forms. Kansas has the material for poetry, as has been shown by what poets elsewhere have written about the state, from Whittier to Lindsay. It is a fortunate thing that this material is being utilized by Kansans.

"The Call of the Open Fields," a small volume by Imri Zumwalt, is one of the most attractive recent examples of Kansas poetry by Kansans. Mr. Zumwalt was brought up and educated in Kansas, and is editor of the Bonner Springs Chieftain.

Not all the poems in the volume deal with Kansas subjects. One of the most effective is "The Desert," from which the following is quoted:

"A tide of amber sunlight
Flooding a waste of sand
To where the walls of granite
In golden glory stand."

Most of the verses, however, suggest, even where they do not deal directly with, the prairies. They tell of "the wheat fields whitening to harvest," "the land of the daisies and goldenrod," "the short and matted grass," "the sun-lit meadows," "the land of the open sky." The beauty of the poems is the beauty of Kansas, and it is a happy thing for the state to have so sympathetic an interpreter.

WINTER WALKING

Winter weather diminishes greatly the time spent in the open air by those who ride in automobiles. It comes near putting bicycles out of use. From steamboats to canoes, there is almost entire cessation of water outings.

All of which means that more walking instead of less ought to be done in cold weather. There is no other way of moving about in the open air which keeps a healthy human being's feet so warm and brings such a glow of warmth from the body itself. If the pedestrian is properly clad, especially in respect to keeping dryshod, all of the effects of winter walking should be beneficial.

With a little care and discretion such exercise can be made as agreeable as it is wholesome. Usually there is no dust. Often the temperature is neither too low for comfort nor too high for vigorous exercise without weariness or lassitude.

Rightly timed and kept within bounds, winter walking is a good precaution against the ill effects of sedentary life and too much indoor air.—Cleveland Leader.

HOMEBURG

You know the little town with the big name, the tiny, obscure village set down in some corner of our states and bearing complacently the title it has borrowed from some ancient and mighty forerunner—Rome, Carthage, Athens, London, Paris, Washington, Alexandria, Antioch, Sparta, even Babylon—there is scarcely a state in the union where you will not find such a postoffice—and sometimes not much more than that. Well, of Alexandria I sing. It's over in Licking county, in St. Alban's township—do you know who that particular saint was?—and once upon a time I dwelt within its somewhat narrow confines.

That was long and long ago; but every year my pilgrim feet go back to it, if only for a few days, usually in the summer, when it is a drowsy place of indolence for me, a place of hammocks and books and country meals, of idle hours along the streams or in the pastures and woods near by, of still Sunday afternoons and long, starlit evenings. But sometimes I go over when the embowering maples are bare of all their leaves, when the gardens and the flower beds are desolate; and then it is always a little forlorn, always stripped of its chief charm, the billowing foliage of its thick-standing trees.

Thus I saw it a Sunday or two ago, when through a glory of sunshine and wind I was whirled up from Granville to spend a few hours. The folks at my aunt's house had gone to church—there are real church bells over at Alexandria; I know how they sounded that morning, though I did not hear them. So I took the key from behind a shutter and went into the clean, sunny house, where I read the Literary

Digest and Everybody's until the thin little streams of people began to come down the street, and presently I was welcomed as I always am. And then we had dinner, with much talk at the table afterward; and then we walked out to see the improvements up at the west end of town—two new houses, both brick, observe, and both with portes cochere, or port cocheres, or something, at the side, which means automobiles, you know. Yes, indeed, I am sure there are a dozen or more automobiles owned right in town, and not all Fords, either. And I found that the old tavern, almost the last landmark in the village, had been moved over on the back street to make room for this new house of Henry Loomis's; and folks feel real glad to

A QUARTER CENTURY AGO

Items from The Industrialist of December 5, 1891

E. H. Kern, '84, writes of his election as surveyor of Jewell county.

J. D. VanDeventer, '86, is in the office of Sports Afild at Denver, Col.

A beautiful "Amazonian lily" (Eucharis Amazonia) is in bloom in the greenhouse.

The cadets gathered in large numbers on the range yesterday afternoon for target practice.

The classes in horticulture have made cuttings of many varieties of grapes and ornamental plants, and are now engaged in grafting apples.

The Nationalist announces the marriage of Miss Belle Selby, '82, to Mr. J. M. Curtice of New York City on

The Higher Aim

Successful Farming

A TRAVELER drove through a good farming country noting on either side evidences of undeveloped agricultural resources. But upon passing before a certain farm he became aware of a remarkable contrast in the condition of every feature and building on this farm as compared to the other farms of that country. Greatly interested by this splendid appearance of one farm as compared to all the others with an apparent equality of resources, he sought to discover a reason for it. While thus engrossed in contemplative admiration, the traveler arrived at the great arched entrance to the farm, and upon a sign above the arch this is what he read:

DON'T WORRY FARM

A FARM OF SEVEN RULES

1. We have faith that, one year with another, nature is bountiful and kind.
2. Acting upon this faith we keep our soils deep and mellow and rich and well drained; so that they may have moisture and strength to tide over drouths and capacity to absorb floods.
3. We diversify and rotate our crops, every season in some fields, after many seasons in others, so that if nature's ways discountenance one crop they must smile others into plentiful harvests.
4. We sell where and when the world wants our products and store when it doesn't need them.
5. We strive for permanence in soil and buildings because our plan includes the future as well as the present.
6. We farm for the love of it first and to make the most of it second, that the part of the world which has no land may eat from the bounty of ours.
7. Because of these our aims we believe it unnecessary to worry, easy to prosper, and difficult to be unhappy.

see the old thing go, because it had stood there for generations.

Not much had happened since I was over last. John Thomas and his wife had just got home from visiting their son Eddie way out in Colorado; and poor old Grandma Ellis had fallen and broken her hip. There was a fire over on The Hill, and she wanted to walk out to the gate to see if she could see the smoke, and she tripped on the rug. "Here I am, now," she says, pitifully, "eighty-five years old, and have to end my days like this." The Methodist preacher was sent back for another year, and the Congregationalists have had to shut up their church on The Hill. They just dwindled down till there weren't enough to support a preacher. Like as not the church'll never be opened again. And, O yes, those newest gas wells have all given out, and no more free gas for Alec folks. Everybody said they were just pockets, anyway, but Emma Fuller and the rest just would have the wells drove; they were sure they'd be fixed for the rest of their lives. Now look at 'em. Everyone had to put coal in again!

Along about that time a chap came along in his machine and I caught a ride back to Granville with him. Bless you, little Ohio town, and all the dear folks who live in you. I hope no year may ever pass that shall not carry me back to your kindly borders.—Ohio State Lantern.

Monday, November 30. Mr. and Mrs. Curtice sailed for Europe Wednesday morning.

Mr. A. A. Cottrell of Wabauensee was present at the Alpha Beta exhibition last evening, and this morning visited various departments of the college, showing all his old-time interest in the industrial features of the institution of which he is a liberal patron.

The annual catalogue for 1890-'91 is out of print, and a remainder from that for 1889-'90 will be used instead during the few months before the issue for 1891-'92. The facts given apply in general to present conditions except in such particulars as are given in this issue of THE INDUSTRIALIST. The course of study now varies slightly from that given in the catalogue, but is still open to graduates from district school courses, and from the best grammar schools.

The fifth division of the third-year class entertained the audience in chapel yesterday afternoon. The speakers and topics follow: A. F. Neimoller, "True Manhood;" Edith McDowell, "Inequality;" Eusebia Mudge, "What Might Have Been;" L. Olmstead, "Objects and Limits of Science;" H. L. Pellet, "The Volunteer Soldier;" Nora Newell, "Are We a Frivolous People;" C. F. Pfuetze, "Russian Nihilism;" J. A. Rokes, "The American Flag."

WINTER RAIN

Eunice Tietjens

Winter now has come again;
All the gentle summer rain
Has grown chill, and stings like pain,
And it whispers of things slain,
Love of mine.

I had thought to bury love,
All the ways and wiles thereof
Buried deep and buried rough—
But it has not been enough,
Heart of mine.

Though I buried him so deep,—
Tramped his grave and piled it steep,
Strewed with flowers the aching heap,—
Yet it seems he cannot sleep,
Soul of mine.

And the drops of winter rain,
In the grave where he is lain
Drip and drip, and sting like pain,
Till my love grows live again,
Life of mine!

SUNFLOWERS

The crowd at a lecture in a small town is never as large "as the merit of the address warranted."

"Anybody who believes women are people," said Simp Sawyer, "ought to read the book of Genesis, where it tells about Abram bringing back the people and the women."

HANK'S KIN

We pity Henry Swartz,
Who thinks Dame Fortune's fickle;
He has so many warts
That he looks like a pickle.
—Pittsburg Post.

And Henry's sister Sue
Her looks are most amazin';
She's wrinkled until you
Would think she was a raisin.
—Houston Post.

Hen and his sister Sue
May look amazin', but
Meet bonehead Dopey Glue
Who acts just like a nut.
—Youngtown Telegram.

His cousin, Mary Deckles,
She has to go about
So marked with yellow freckles
She looks just like a trout.
—Erie Dispatch.

And Henry's brother Ned—
Yes, he is with us still—
So little hair upon his head
He's like a polished pill.
—Memphis Commercial-Appeal.

And Henry's youthful wife,
Though fair enough to see,
Wears green and yellow stockings,
When she goes out to tea.

WORK ADDS TO LIFE

"If you wish to live past eighty," says ex-Senator Chauncey M. Depew, "don't change your occupation at seventy."

Keep on doing something, even if it be nothing but golf or politics. Examine the records of mankind and you will be astonished to see how many important things were done in an unimportant or offhand sort of way.

Walter Scott said, "Never be doing nothing." Macaulay took that advice and wrote "Lays of Ancient Rome" in spare moments while employed in the British war office.

Beaconsfield got \$50,000 for his "Endymion," written as recreation during his immense political work.

His greatest rival, Gladstone, was up to his ears in politics all his life, but he wrote learned essays on religion and Homer in what he styled his "idle hours."

Another celebrated man is said to have inscribed upon the title page of a successful book:

"This was written in the intervals of time waiting for dinner."

Scott dictated two of his Waverley novels while too ill to sit up and when suffering the greatest pain.

Grant completed his "Memoirs" at Mount McGregor when dying of cancer.

Elihu Burritt, in order to read the Bible in the original texts, learned Hebrew and Greek while apprenticed to a blacksmith, and so became a world prodigy in languages.

Mr. Depew is right. Keep occupied, because medical statistics prove that those who live longest are the ones who were healthily employed.—Philadelphia Public Ledger.

AMONG THE ALUMNI

Prof. R. H. Brown, '98, of the department of music, is slowly recovering from a serious case of poisoning.

E. Q. Perry, '15, is taking graduate work in the University of Nebraska and teaching in the Lincoln high school.

Miss Reva E. Lint, '13, who has been ill for several weeks, is recovering and expects shortly to resume her teaching in Dodge City.

Mr. and Mrs. George K. Helder, '93, have moved to Billings, Mont., where they will make their home. Mr. Helder is in an office supply house.

Harlan R. Sumner, '16, spent the vacation in Manhattan visiting home folk and college friends. He is taking graduate work in the University of Missouri.

Mrs. Wilma (Cross) Rhodes, '04, and two children left Topeka Thursday for Baltimore, Md., where they will make their home for the winter and possibly longer.

Miss Lillian Lathrop, '16, who is teaching domestic science and history in the Dodge City high school, spent the Thanksgiving vacation with her mother in Manhattan.

Professors C. A. Scott, '01, G. A. Dean, '95, Albert Dickens, '93, and G. O. Greene, '00, are on the program of the Kansas Horticultural society, which meets in Topeka December 9.

MARRIAGES

HOCKERSMITH-BUSHEY

Miss Helen Hockersmith, '14, of Manhattan and Mr. Glenn A. Bushey, '10, of Salt Lake were married last week at the home of Mr. and Mrs. Richard D. Edwards, Salt Lake, Utah. The Rev. George E. Davis officiated. Mr. and Mrs. Bushey will be at home after December 15 at 624 City avenue, Salt Lake.

Mr. Bushey is an electrical engineer connected with the Utah Power and Light company. Mrs. Bushey was formerly assistant professor of home economics in the Fort Hays Kansas Normal school.

DEATHS

MRS. GEORGE CARTER WILDER

Mrs. George Carter Wilder, well known to college alumni and students, died at 11 o'clock Sunday evening at her home in Manhattan. The funeral was held at the First Methodist church Wednesday afternoon.

Mrs. Wilder was author of a large number of books and short stories, most of them representing the field of religious fiction. She enjoyed the distinction of being the only person in Manhattan, outside the college faculty, named in "Who's Who in America."

She had taught since 1870 a class of young men in the Methodist Sunday school. She had had under instruction more than 3,000 young men, with many of whom she had kept in close touch in their work after leaving college.

Surviving Mrs. Wilder are her husband and two daughters, Mrs. Josephine (Wilder) McCullough, '98, of Delavan, and Mrs. Adelaide (Wilder) Sawdon, '98, of Ithaca, N. Y. Dr. W. A. McCullough, one of her sons-in-law, is also an alumnus of the college, being a member of the class of 1898.

PROFS. AND STUDENTS WILL WORK ON FIELD

To Put Athletic Park into Condition Thursday—College Exercises Are Suspended

A "presto-change" stunt will be accomplished on the college athletic field Thursday, when an army of students and faculty members clad in overalls and jumpers and equipped with picks, shovels, wheelbarrows, and surveying instruments, will work a rapid-fire transformation which will put the athletic grounds on a par with others of Missouri valley institutions.

For the purpose of encouraging athletics in the agricultural college, Dr. Henry J. Waters, president, closed classes for Thursday.

The gridiron will be tiled and a new field laid out north of the running track. The work will be done by five divisions of squads. Twenty squads will be furnished by the agricultural division, 10 by the engineering division, five by the general science division, and five by the school of agriculture. Once on the field, the men will be apportioned to various division superintendents, who will have a portion of the day's work to oversee. The work of organizing the squads was left to the deans. The squads, each of which will be composed of between 25 and 30 workers, will assemble on the field at 8 o'clock in the morning.

The home economics division is making elaborate preparations to feed the workers. The girls will serve the food. It is expected that 500 pounds of wienies, 350 pies, 200 dozen doughnuts, and 100 gallons of coffee will be consumed.

The food will be cooked in the cafeteria and in the domestic science laboratories. The commissary division of the regiments have charge of getting the food out to the field. The squads will line up systematically, and will be served at four counters.

The last word on the program of the day will be given out in student assembly Wednesday morning.

HORSE SHOULD BE PROTECTED FROM HEAT, COLD, AND STORM

Ventilation Should Be Attended to, Especially in Winter

Protection from heat and storm in summer and from cold and storm in winter is the biggest factor in making a horse comfortable at night, points out Dr. C. W. McCampbell, associate professor of animal husbandry in the Kansas State Agricultural college.

"In summer a paddock or pasture with access to a shed may be used, and is preferable with idle horses. A barn which at all times should be well ventilated but free from drafts may be used," said Doctor McCampbell.

"In this climate the horse should have access to an open shed or stable at night in the winter time, and ventilation should be looked to at this time particularly, as it is really more likely to be neglected than in summer."

A box stall is best but is not always practical, believes Doctor McCampbell. In any case each horse should have a stall to himself, and the stall should be large enough for the horse to lie down in comfort.

The floor may be made of cement, boards, or dirt, but in any case plenty of clean, fresh bedding should be provided.

COOKING FEED FOR SWINE IS USUALLY INADVISABLE

Experiment Stations Have Found Actual Loss in the Practice

Cooking feed for swine generally is not an advisable practice, points out Ray Gatewood, instructor in animal husbandry in the Kansas State Agricultural college.

"Much experimenting has been done along this line," said Mr. Gatewood, "and practically all experiment stations have found an actual loss encountered by cooking feeds."

"With most feeds, cooking tends to lower the digestibility, resulting in a larger amount of feed being required to produce a given amount of gain. This raises the expense of production and cuts down the producer's profits."

"Some feeds used in certain localities—such as potatoes, field peas, and roots—have their palatability improved and their water content lowered by cooking, which results in a larger consumption. These, however, are not common feeds in Kansas. Cooking requires special apparatus, and of course takes time and labor, all adding to the expense of production."

"It may be profitable to heat drinking water and water in which feeds are mixed in cold weather, as this will decrease the amount of feed required to maintain the body temperature."

DON'T LOSE PLANT FOOD

CAREFUL FARMERS SEE THAT MANURE IS PROPERLY HANDLED

Should Be Placed on Soil as Soon as Practicable, Says Professor Throckmorton—Facilities for Storage Will Prevent Waste

Most Kansas farmers recognize the value of manure in maintaining the fertility of the soil, but few take the proper precautions to prevent losses in this valuable by-product, according to R. I. Throckmorton, associate professor of agronomy in the Kansas State Agricultural college.

"The manure should be hauled out and put on the soil as soon after being formed as convenient—the sooner the better," said Professor Throckmorton. "If manure is allowed to stand as long as six months it loses more than 60 per cent of its plant food value."

LEACHING CUTS FOOD VALUE

"There are several ways in which the food value may be lost. Some of it is lost by leaching. For example, when a manure pile is placed under the eaves of the barn, water passes through it and there is waste. The liquid excrement, which contains more than half the food value, may seep out of the manure and be lost when it is allowed to stand. A large amount of the organic matter is destroyed by oxidation if the manure is allowed to stand long."

"But the farmer may get the full value of the manure if he will only take the precautions which prevent the losses mentioned. The manure may be thrown into a spreader and hauled to the field as soon as a spreader full has accumulated. A shedlike roof large enough to protect the pile from the weather and situated so that water will not drain to and stand around it will prevent much loss in the value of the manure."

CEMENT PIT FOR STORAGE

"Manure may be stored in a manure pit situated conveniently near the barn. The pit need not be expensive. It may consist of a cement floor and cement sides two or more feet high. The dimensions will of course depend on the amount of manure formed on the farm. Such a pit retains all the excrement with a small loss in food value. It need not be covered."

"Farmers should realize how great their loss is and then use some method to prevent such a loss. If the farmer will get the manure to the soil without appreciable loss of plant food value the fertilizing power will be doubled what it would be if the manure were allowed to stand for some time."

HERE'S A DANGEROUS PRACTICE

Not only are many large stacks of manure accumulating on too large a number of farms in this state, in the opinion of Mr. Throckmorton, but some farmers have invested in costly equipment in the way of tracks, trolleys, and sewers to dump the manure into adjacent creeks or rivers.

Such a practice is both dangerous and wasteful—dangerous because it pollutes the streams and shallow wells for the farmer farther down the stream, forcing him to use impure water and making it easy for the spread of contagious diseases; wasteful because plant food is being placed where it will be lost instead of being returned to the soil which produced the plant. The time is not far distant when the farmer will hold in high regard his predecessor who conserved the available food supply both for himself and for posterity.

USUALLY SPREAD TOO THICKLY

Spread the manure as it is formed, and spread it evenly, advises Professor Throckmorton. Much of the manure distributed is put on the field too unevenly and too thickly. If spread too thickly it will "burn" and thus lose its nitrogen and have a harmful effect where it is put on growing crops.

"Five to 10 tons to the acre is a sufficient amount for all but the very poorest soils. Many farmers are putting 15 to 20 tons to the acre when

greater results might be had with one-half the amount that they are using."

In experiments carried out by the college experiment station five to 10 tons to the acre applied to growing wheat after the fall growth, have given definite and profitable results for the growing crop and for the following crops from three to 10 years after the application, depending on the crops grown.

FLOWING UNDER NOT NEEDED

Alfalfa or fall plowed fields may be given a top dressing of manure with profit, any time during the winter or early spring before growth starts.

Do not spread manure with the idea of plowing it under immediately, for this practice has been shown to give bad results, warns Professor Throckmorton. When distributed evenly and thinly on the soil, it will not lose an appreciable amount of the plant food into the air, as supposed by some persons. It does not need to be plowed under in order to get it incorporated into the soil, because the tendency is for the plant food to sink into the soil with the rain and water from the melting snow.

Save and incorporate the liquid portion into the solid portion of the manure as it is formed. It is the most valuable part. Spread the manure as quickly as possible. Do not burn or throw away large accumulations or piles of manure, however, just because they have lost part of their value. They are probably still worth \$2 to \$2.50 a ton as a top dressing applied to growing wheat or alfalfa.

MINUTEST DETAILS COUNT IN POULTRY FOR SHOW PURPOSE

R. M. Sherwood Points Out Matters That Owner Must Attend To

In preparing poultry for shows, the minutest details must be looked after, points out R. M. Sherwood, acting head of the department of poultry husbandry.

"All the feathers of the wrong color are picked out, except in the wings and tail," said Mr. Sherwood. "The absence of these heavy feathers is a serious defect, and in some cases might cause disqualification. Sometimes they are removed two months before the show in the hope that when they are replaced the new feathers will be of the correct color."

"Cleanliness of the fowl is important. The scales of the legs are scrubbed, and the beak is cleaned. Sometimes an exhibitor goes so far as to paint the ear lobes."

TELLS HOW TO MAKE NORTH ROOM BRIGHT AND CHEERY

Home Art Specialist Suggests Use of Warm Colors

Have you a bugbear of a north room that always eludes your attempts to make it livable? Now that winter is coming, it might be just the place for the children to use as a play room, or the older ones for quiet study and reading.

"The problem facing one who furnishes a north room is that of making it light, bright, and warm," commented Miss Araminta Holman, instructor in home art in the Kansas State Agricultural college. "Since this room lacks sunshine, yellow is the best color to use. Yellow will cheer and brighten it, and yellow which has a little red to warm it will be better than a 'cold' color. Orange is the warmest color. Browns are tones of orange and better to use than gray, black, or blue. One should use browns that have more yellow than red."

"If the room is a 'den,' the furniture may be walnut or oak, but if it is a bedroom, bird's-eye maple or cherry may be used. The curtains should be light, in tones of yellow or orange. The material should be thin and transparent to admit all the light possible."

"Backgrounds should be yellow or orange—warm colors. The woods used should be in harmony with the other furnishings of the room. Dark tones express formality, dignity, repose, and seriousness. Light tones express gaiety, youth, and informality."

LOSES BILLIONS A YEAR

AMERICAN HOUSEHOLD WASTES ENORMOUS SUM, SAYS LECTURER

Throws Away \$800 a Year and Calls it Domestic Economy, Asserts Charlotte Perkins Gilman—Absurd for Every Woman to Cook

"The enormous sum of fifteen billion dollars is wasted in the United States each year because food is prepared in the home kitchen." This was the assertion of Mrs. Charlotte Perkins Gilman of New York, author, lecturer, and sociologist, who spoke Tuesday before the home economics division of the Kansas State Agricultural college.

"This computation was made by experts and was based on the census of 1910," said the speaker. "The annual waste in each household is \$800—and we call the present system domestic economy."

HOW TO SAVE 50 PER CENT

"More than half the present expenses of the household could be saved by having the food prepared in trade kitchens and delivered to the homes as is now done in the case of bread. There would be the saving of equipment, the saving that comes from buying in large quantities, the wages of the relieved housewives who would be enabled to find other employment, as well as improved health on the part of many."

"Food preparation is one of the three trades still carried on in the home. The others still remaining are keeping things clean and the care of children."

WOMAN MOTHER OF INDUSTRY

"Woman is the mother of industry as well as mother of the race. Among primitive peoples all occupations are followed by woman in the home, the man devoting his time to hunting and fighting. Even in civilized nations the instinct of industry is stronger in woman than in man. But while the trades that have been taken from the home, such as spinning and weaving, are highly specialized and organized, those which remain in the home are still in a backward state."

"There was just as much fuss made when the spinning wheel was taken from the home as there is now at the idea that it should be followed by the cook stove."

HOUSEKEEPING ON BUSINESS BASIS

"If women had as much business sense as men they would long ago have put housekeeping on a business basis, leaving themselves free for the higher calling of homemaking. If 100 men were to engage in the lumbering business they would not delegate half their number to act as cooks, one cook for each laborer, as is done in the home of today. Nor would they stop work and each prepare his own meals. They would employ one, two, or three cooks as the case might be, in order to save strength, time, and labor."

"It is as absurd to suppose that every woman should become a cook as that every boy should learn music. Suppose every boy were compelled to learn music and to learn it from his father, learning a few new tunes from his uncles, or when he goes visiting. Suppose that after marriage he were compelled to practice his music three times a day. How much music would there be in the world?"

"Marriage and motherhood are entirely separate from housework, which is a business in itself. If all homes were happy, which is not true; if all housewives were good cooks, which they are not; if all children were healthy, which is far from the fact—then the present system would be continued in spite of the waste, since it would be worth while."

"The woman of the future because of the demands of motherhood will refuse to be a house servant. Her ideal will be a happier marriage, a higher motherhood, and children with better health and better education."

Mrs. Gilman read two of her poems, one on the six hours a day required for the preparation of food in the home and one on the cook stove.

EARTH ROAD MAINTENANCE CHIEF HIGHWAY PROBLEM

COMPARATIVELY SMALL AMOUNT OF PAVING IN COUNTRY WILL
BE DONE IN PRESENT GENERATION—HOW TO IN-
SURE PROPER CONSTRUCTION AND CARE

Earth road maintenance now is and will continue for some years to be the real road problem of Kansas, since it is not likely that more than a very small per cent of the highways will be paved in this generation, asserts W. S. Gearhart, professor of highway engineering in the Kansas State Agricultural college and state highway engineer.

"Practically all the work done on an earth road, except reduction of grades, correction of horizontal alignment, building of drainage structures, and elimination of railway grade crossings, is temporary and should properly be considered maintenance," said Mr. Gearhart.

MUST BE KEPT UP CONSTANTLY

"Doing permanent work is a comparatively easy matter, for when once it is done correctly it will last for a number of years. The maintenance of an earth road, however, is a never ending job. It is like milking the cows and doing other chores, for the builder knows that the work of maintenance will have to be done over and over again and can never feel that it is in any sense permanent.

"For this reason the earth road has a bad reputation. The trouble is not so much with the material of which the road is composed as with our system or lack of system of management. Other types of roads when treated as we treat the earth roads are much more expensive and serve the traveling public little if any better. The vast improvement that can be made on our present earth roads by intelligent direction in their construction and maintenance is little realized by the public, and the serviceability of a properly maintained earth road is not appreciated when compared with other types of roads as to cost of construction.

MUST RECOGNIZE REQUIREMENTS

"Successful construction and maintenance of any kind of a road depends upon the recognition by the public and the builders of a few fixed and fundamental requirements.

"One practical, well paid road builder should be made responsible for the upkeep of a certain section of road and should be employed throughout the year, his tenure of office being made dependent entirely upon the character of services rendered.

"The graded portion of the road should be elevated and crowned so that the water from every section of the road surface will flow into the side ditches.

DRAINAGE IS PRIME ESSENTIAL

"The road should have a ditch along each side large enough to carry off the water. These ditches should have a continuous fall from the highest point to the outlet, and outlets from the ditches and all culverts into the fields and natural waterways should be provided whenever possible, in order that the water may be drained away from the roadway. Both the construction and the maintenance should be timely.

"Drainage is the prime essential in all road maintenance but it never will be adequately provided for until men who appreciate its importance and who know how to drain the roads are placed in charge of the work.

HOW WIDE A ROAD?

"The proper width for a highway depends on the kind of soil, the amount of traffic, the drainage and topography of the adjacent fields. Under normal conditions 25 to 30 feet between the centers of the side ditches has proved satisfactory, but in low, flat country or where the drainage is not good the width should be increased in order that the traveled portion may be raised a sufficient amount above the side ditches to drain the road surface thoroughly without making the traveled portion too steep. On

heavily traveled roads and where the drainage is poor a width of 35 to 40 feet between the centers of the side ditches will be more satisfactory.

"Such a width will make it possible to maintain the 18 or 20 feet of traveled surfaces with just enough crown to shed the water, and will give a good convenient surface to drive upon. The fall to the side ditches then can be obtained between the center of the ditches and the edge of the traveled portion. If the road is narrower and has to be raised considerably above the side ditches the traveled portion becomes so steep that it is difficult and dangerous to drive upon.

NARROW ROADS—MORE MILEAGE

"In the construction of new roads it is always advisable to make them as narrow as practical in order that as large a mileage as possible can be constructed at one time. Then, as the traffic increases, the road can be widened at a small cost. On local roads a width of from 22 to 25 feet between the centers of the side ditches will be, as a rule, satisfactory.

"The depth any road should be crowned depends upon the character of the soil, and the width and the location of the road. Each portion of the road is a special problem in itself and should be treated as such. In general the traveled portion of a clay or a loam soil in Kansas should be crowned from three-fourths to 1½ inches per foot, while in sandy soil a crown one-half to three-quarters inches to the foot is ample. The only object in crowning the road is to cause the water which falls upon the surface to flow to the sides readily and without doing any damage. To prevent the surface from breaking through and the frost from disturbing it the traveled portion of the road must be raised so that the surface will be well above the ground water.

WIDE SIDE DITCHES NEEDED

"The side ditches should be made wide and flat instead of V-shaped, to reduce the erosive action of the water. Sod will form in flat ditches and the grass will retard the flow of water. The outside of the ditch should be sloped off to prevent the sides from falling in and filling the ditch. The outside can be made easily if the cut is not more than three feet deep, by placing two wheels of the grader in the ditch and the other two on the bank and setting the grader blade at somewhere near 45 degrees.

"These side ditches should have a continuous fall from the highest point to the lowest point or outlet. Outlets should be provided as often as possible so as to take the water off the roadway. Special attention should be given them as water is often found in pools along the side ditches when if a true grade had been maintained or outlets provided the bogs and mires would have been avoided and the otherwise well made roads would be excellent highways of travel.

"Road maintenance work can be timely if the patrol system or section system is adopted, where one man is given charge of a section of highway and devotes all his time to the work. The grading and other construction work will not interfere and will be done at the right time if regular crews of men and teams are employed and kept at the work for the season.

WHAT SYSTEM TO USE

"In highway work, as in other construction work, the contract system has its advantages, inasmuch as the work is done at the proper time, the improvement entirely completed, and the work finished at a fixed price. There are, however, some serious objections to the contract system, for it is difficult to state in the specifications just what the contractor is expected to do. The cost of the improve-

ment ordinarily will not warrant the making of extensive surveys and preparing a profile and cross sections as is done in making more expensive road improvements.

"These details will be worked out in each case, when a county has the services of a competent county engineer and a thoroughly practical road overseer for each section of the roads."

THOUSAND DOZEN EGGS A YEAR FROM 100 HENS

This Is Normal Number, but Requires
Proper Food, Points Out Pro-
fessor Sherwood

A flock of 100 hens should produce 1,000 dozen eggs in a year, but in order to do this they must be fed the proper amount of protein in connection with fat and mineral matter, according to Ross M. Sherwood, acting head of the department of poultry husbandry in the Kansas State Agricultural college.

"In the analysis of the dry matter of the egg the yolk is found to be one-third protein and two-thirds fat, while the white is almost wholly protein and the shell almost wholly mineral," said Mr. Sherwood. "Poultry raisers often neglect to give their fowls feed which supplies an adequate amount of protein.

"The poultry department in the agricultural college uses and recommends a dry mash consisting of six pounds of corn chop, six pounds of bran, three pounds of wheat middlings or shorts, and two pounds of meat scraps."

Two or more of the cheapest grains available are fed in straw to induce scratching, and thus give the fowls exercise. Kafir, feterita, or milo may be used with corn. Oats, although not so good, may provide 15 per cent of the grain.

Meat scraps, which furnish the necessary protein for the egg, can be bought from any packing company as a dried product for approximately \$3 per 100 pounds. This amount mixed in the proportions given is sufficient for 850 pounds of dry mash.

The only substitute for the meat scrap available to the farmer is sour milk which, if kept before the fowls, will cut down the amount of meat scraps one-half. It is easier for the hen to digest and has a tonic effect.

Shorts and corn provide the fat producing foods, and oyster shell furnishes the shell material for the egg. Other shells, if available in quantity, may be used.

BOOK MAKES RIGHT GIFT FOR CHILD THAT LIKES STORIES

Librarian Advises Choice from Among
Tales Boys and Girls Should Know

No better Christmas gift can be found for children who are just becoming interested in stories than a good book. There are stories that every child should know and it is well to choose from these.

"For little folks the Mother Goose rimes and the Kate Greenway books are classics," says Miss Grace E. Derby, assistant librarian in the Kansas State Agricultural college. "Fairy stories should be placed before children. Grimm's fairy tales, those of Hans Christian Andersen, and the 'Red,' 'Green,' and 'Blue,' fairy books, edited by Andrew Lang, are splendid collections. Children should know old myths and legends, and fairy stories naturally lead to them.

"As the child grows older he will love to have read to him the 'B'r'er Rabbit' stories of Joel Chandler Harris and Kipling's 'Just-So Stories.' Boys are generally interested in brownies. Palmer Cox has immortalized the brownies in verse.

"Eugene Field's 'Lullaby-Land' and James Whitcomb Riley's 'Rimes of Childhood' are especially appealing poetry for children. 'The Child's Garden of Verses' by R. L. Stevenson, illustrated by E. Mars and M. H. Squires, is good, the illustrations being artistic and pleasing to children."

SHOULD KEEP SCALE OUT

KANSAS TREE PLANTERS SHOULD
TAKE PRECAUTIONS

Climatic Conditions Help Control Pest in
State, but Orchardists May Well Guard
Against Infestation, Say Au-
thors of Bulletin

Prospective planters of trees in Kansas susceptible to the attack of the San José scale should take precautionary measures to avoid infestation, particularly if the nursery from which the trees are obtained is in or near an infested area. This is the advice in a Kansas Agricultural Experiment station bulletin on "The San José Scale," by Dr. J. H. Merrill, assistant professor of entomology in the agricultural college, and Leonard M. Peairs, professor of entomology in the University of Virginia and formerly connected with the agricultural college.

"Climatic conditions are doubtless effective in controlling the scale in Kansas," reads the bulletin. "While many seasons are extremely favorable for its growth there are others which are quite the reverse. Severe winter weather, with temperature ranging from 10 to 20 degrees below zero, coming suddenly after mild autumn weather, will kill large numbers. We have not, however, found any single planting where all the scale has been killed. Very cold rains and sleet, forming an icy coating on twigs, followed by freezing weather, will kill many scales.

CAN'T CRAWL IN DUST

"Extremely hot and dry periods of long duration are unfavorable to the insect. Especially is this true where the soil and roads are very dusty. A coating of dust interferes greatly with the young crawling scales, causing many to perish.

"The carriers of the scale may be, and usually are, destroyers as well, consequently only a small percentage of young are carried to suitable food plants. Many fall to the ground and die. Some lodge on plants not suitable for food, as weeds and crops growing in or near the orchard. These may feed and live for a few days, but will not thrive or reproduce, and will perish in the fall when these plants, which for the most part are annuals, die. The inability of the San José scale to move from tree to tree and from orchard to orchard of its own volition is its greatest handicap.

SCALE REPRODUCES RAPIDLY

"This explains why the scale has not entirely overrun the fruit growing regions of the country, and why it may be controlled by artificial means. It shows, also, how it may happen that some orchards adjacent to bad infestations may remain free for several years, as it is entirely a matter of chance when infestation takes place. The laws of chance, however, will not permit us to rely on any plant remaining long clean in an infested district. The limitations these and other factors impose on its dissemination are more than equalized by the rapidity with which the scale reproduces, which is greater than almost any insect of economic importance.

"Natural enemies play an important part in keeping down the scale, but are not to be considered as a substitute for practical measures of control. In its native home the scale is kept under subjugation by the Asiatic ladybird. This has been introduced into America from China by the bureau of entomology, United States department of agriculture. It has never become sufficiently well acclimated or has not multiplied rapidly enough to be of practical value. Many of our native ladybirds feed upon San José scale, but since their taste for it is an acquired one, they do not give it the undivided attention necessary to render them important factors in its control.

SEEK SCALE-FREE NURSERIES

"The prospective planter of trees which are susceptible to attack by San José scale will do well to obtain his trees from localities known to be free

from scale and from nurseries which have never been infested. When possible he should take pains to ascertain that the owner of the nursery is reliable, that up-to-date inspection is practiced, and that careful inspection is made by the authorities of the state in which the stock is grown. He should find out from his own state officials just what the certificate of inspection from the state in question is worth.

"It is also well to insist that the nurseryman send only trees grown in his own plantings, and not stock bought elsewhere, to fill orders. When the nursery is situated in or near an infested district the buyer of stock should insist on a certificate of fumigation as well as inspection. Better still, he should arrange to fumigate or dip all stock himself before planting. Such a course would reduce the danger of infestation to a minimum.

WHEN TO DESTROY TREES

"The only way to free an infested planting beyond possibility of doubt is to destroy every tree on which scale can be found and all trees in the immediate vicinity. Such drastic measures are recommended only when very few infested trees are found and when the infestation is evidently of recent origin, and for trees which have become so severely injured that their vitality has been reduced and there is no probability of recovery even should the scales be killed. In the latter case it is advisable, as a rule, to remove only the trees which are in the condition described and to spray all others in the same planting. Trees removed should either be grubbed out below the surface of the ground, or the stumps kept free from sprouts for a season.

"Often the limbs of trees, especially peach trees, will be badly injured, or even dead, while the trunks are sound. In this case it is a good practice to prune heavily, cutting out all dead wood, or even to dehorn the trees; that is, to cut off all branches to a height of six or eight feet from the ground and allow the stubs to form an entirely new top. This entails the loss of one season's crop, but gives practically a new tree. The principal objection to this treatment is that the new branches will not bear the weight of a heavy crop as well as the original ones.

SPRAYING IS CONTROL METHOD

"The universally accepted method for scale control in general is spraying. All the other control measures so far considered merely lead up to this and are accessory to it. It has been found that spraying with proper materials at the right time, if done thoroughly once a year, or in many cases every two or three years, will keep the scale under control and prevent its doing damage either to the trees or the crop. Hence, spraying has become an accepted part of the routine in commercial fruit plantings where scale is prevalent, even when it is not continued for the control of other insects throughout the season. In fact, some writers have gone so far as to declare the scale a blessing in disguise, as it has forced many growers to provide themselves with spraying machinery, which has led to their taking up spraying for other insects and plant diseases, with the result that the increased quantity and better quality of fruit have more than repaid all costs of machinery, labor, and materials."

The bulletin, which may be had, upon request, from the agricultural college, gives complete instructions relative to fumigation, dipping, and spraying.

The Arctic tern, scientists declare, holds the record for length of bird migration. In a few months it will fly from the Arctic to the Antarctic regions.

An increase in farm land values varying from 25 to 194 per cent has been produced by improvement of main market roads, according to statistics collected by the federal office of public roads and rural engineering.

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Number 12

TO CUT OX WARBLE LOSS

STOCKMEN CAN REDUCE DAMAGE TO ALMOST NOTHING—DEAN

Treatment Should Be Given to Infected Animals Between Now and Middle of January—Injury to Hides Alone Totals Millions a Year

Injury by the ox warble, amounting to millions of dollars annually, could be reduced to almost nothing if stockmen would practice effective practical methods of control, according to G. A. Dean, professor of entomology in the Kansas State Agricultural college.

"The presence of the ox warble is detected by passing the hand over the back of the animal," said Professor Dean. "The warble may be destroyed by putting kerosene, turpentine, or mercurial ointment in or on the opening through the skin directly over the grubs. This treatment should be given when the grubs appear on the backs of cattle, from the latter part of December to the middle of January, because if the grubs become tough before being killed they are likely to cause sores.

EXAMINE CATTLE AGAIN LATER

"If the opening through the skin is very small it should be enlarged with a smooth, pointed stick. A machinist's oil can having a slender nozzle furnishes an excellent method of applying the medicine. This treatment may be applied rapidly by running the cattle through a chute, with one man stationed on each side provided with an oil can filled with the medicine.

"The cattle should be examined from 15 to 20 days later, and any grubs that escape the first treatment should be squeezed out and crushed. It is important that any grubs squeezed out be destroyed, else they will transform into adult flies.

"The ox warble is one of the worst enemies of cattle, especially in the grazing sections. It is sometimes called botfly, and heel fly, and is also often spoken of as a grub.

FLY RESEMBLES HONEYBEE

"In general appearance and size, the adult fly, like many other botflies, resembles the common honeybee. It is half an inch long, black, and covered with yellowish white and reddish brown and black hairs.

"In the spring from the latter part of March to the first of May the flies appear about the cattle, laying their eggs upon the legs, especially in the region just above the hoof. It is from this habit of placing the eggs near the heels that they get the name of heel fly in the west and the southwest. The eggs are also placed on the flanks, belly, and sides but never on the back. In the act of laying the eggs the flies approach the cattle so swiftly that they are difficult to observe except just at the moment of placing the egg. The structure of the lower portion of the egg is of such a nature that it clasps the hair by means of two lips which close over it and form a very firm attachment. Usually from two to six of these eggs are fastened in a row on a single hair. The egg is smooth and yellowish white.

HOW WARBLE LARVÆ DEVELOP

"The animal licks the part of the body upon which the eggs are laid. They are hatched by the moisture of the saliva and the pressure of the tongue. Some of the larvæ are carried by the tongue into the mouth, but perhaps the greater number bore a hole through the skin at the base of the hair on which the eggs were laid and from here they work their way under the skin to the upper part of the gutlet. After penetrating the gutlet the larvæ wander for several months through the connective tissue of the skin and the flesh until they locate beneath the skin in the region of the back.

"They now become more spiny and bore holes through the skin apparently to get air for respiration during this stage. They develop so rapidly, subsisting on the pus and bloody serum which their presence beneath the skin induces, that the lumps are large enough to be noticed by the latter part of December or early January.

"When full grown the larva is about one inch long, rather robust, and a dirty white. In February or March it works its way out through the hole previously used as a source of air, by means of its strong spiny covering. It falls to the ground, burrows into the dirt or litter, contracts and hardens, pupates, and transforms in from three to six weeks into an adult fly.

FOUR TYPES OF INJURY

"The extent and manner of the injury from warbles must be considered from four points of view—loss incurred on the hides perforated by the maggots and therefore discounted or rejected in the markets; loss in flesh and milk caused by fretting and stampeding due to the presence of the flies; loss in flesh or milk due to the reduced vitality of the animal; loss due to the production of 'licked beef.' The last mentioned condition results from the presence of the grub or warble. 'Licked beef' has a moist or running surface of a greenish yellow color, frequently presenting a frothy or jelly-like appearance, which is sufficient to condemn it as first class meat.

"In 1915 it was estimated that 60 per cent of the cattle in Kansas were infected with warbles. The annual financial loss on damaged hides alone is now estimated for the United States at from \$25,000,000 to \$30,000,000."

WINTER IS TIME FOR CUTTING DOWN TREES

Logs Can Be Handled Economically, and Get Well Seasoned Before They Are Used

Tree cutting should be done in winter. Timber dries slowly at this time of year and there is little damage from season checking.

Logs are handled economically in the winter months, points out Charles A. Scott, state forester. A sled can be constructed on which four times as many logs can be hauled as on wheels.

If logs or posts are cut in winter, they become well seasoned before they are set, and proper seasoning is the most economical preservative treatment one can give to posts or poles.

All the great industrial concerns, such as railroad, telegraph, and telephone companies, that use enormous quantities of timbers, specify that they must be cut between October 1 and March 1. Experience has shown that best results have been obtained by cutting at this time.

MIAMI COUNTY FARM BUREAU ANNUAL MEETING TOMORROW

Dean Johnson and Professor Cochel Will Make Special Addresses

Edward C. Johnson, dean of extension in the Kansas State Agricultural college, will speak on "The Successful Fifth" at the annual Miami county farm bureau meeting in Paola tomorrow.

"The Live Stock Situation," will be the subject of an address by W. A. Cochel, professor of animal husbandry in the college.

Reports on work and plans of the bureau for 1917, and reports on farm crops and rural problems will be made by committees.

The United States department of agriculture will build in California a plant for conducting experimental work in the production of potash from kelp.

PAINT AND THE CLIMATE

HEAT PRODUCES MORE EFFECT THAN COLD, TESTS SHOW

Prof. H. H. King Carries on Experiments to Discover Pigments and Oils Best Suited to Kansas Conditions—Material Is Blamed Too Often

Cold weather, contrary to general opinion, has less effect on paint than hot weather, according to the results obtained from experiments during the last year by H. H. King, associate professor of chemistry in the Kansas State Agricultural college. The experiments are for the purpose of ascertaining what kinds of paint pigments and mixtures of these pigments together with the various drying oils are best suited to the Kansas climate.

A test fence running east and west was built a year ago. On each side were placed 65 panels of selected wood painted with 65 different kinds of white paint. A panel of each kind of paint was placed on each side so that the effects of the two exposures might be compared. The paints were all made of white pigments ground in oils, but varied as to the proportions and kinds of white lead, zinc oxide, inert pigments, and fillers.

SUN WORKS ON PAINTS

The panels exposed to the hot sun were found to have undergone a greater degree of deterioration than those which had been exposed to the wind, sleet, and snow on the north side.

Another such fence running north and south has 60 panels on each side, those facing east being tinted yellow and those on the west gray. Corresponding panels on this fence differ only in the coloring matter used. The gray panels show the most pronounced signs of weathering. This difference, however, is not attributed to the difference in tint but to the effect of the strong sunshine to which the gray is subjected. The sun, baking the board, causes the resin to come to the surface, pushing off the paint film.

OILS DON'T DIFFER MUCH

On some panels a chalking tendency shows a softened surface. The paints mixed with the inert substances show this tendency less decidedly, for they are not so susceptible to the action of the air.

The oil tests, after one year of exposure, show no material difference in the paints containing drying oils not commonly used in paints. Sunflower oil, menhaden fish oil, cottonseed oil, and corn oil were used, being mixed with linseed oil in varying proportions.

A committee composed of H. A. Gardner, director of the scientific section of the American Paint Manufacturers' association; W. H. Hendricks, general sales engineer of the New Jersey Zinc company; Dr. J. A. Schaeffer, head chemist for the Picher Lead company; and Professor King, have examined these fences and the results of their observations are to be published in a bulletin now in preparation.

PRIMING COAT MOST IMPORTANT

"Poor results in painting are more often the fault of the painter than of the paints," said Professor King. "Either the lumber does not possess the proper surface, or the painter is unfamiliar with the best methods. Resinous, sappy, or green wood is unfit for paint. When heated, the resin 'fries out' and the sap evaporates taking off the film of paint. Warping wood sometimes causes splitting and peeling of the paint.

"The most important part in the application of paint is the priming coat. This coat should have the most care because it is the bond between the wood surface and the subsequent

coats. The paint should be thinned with turpentine to make it penetrate the wood and carry the oil into the pores. If the priming coat is not well applied the utmost skill will make no difference in the staying qualities of the following coats."

COLLEGE STOCK WINS IN SHOW AT CHICAGO

Takes High Places in International Exhibition—Judging Team Ranks Fifth

Kansas State Agricultural college stock made an exceptionally creditable showing in the International Live Stock show in Chicago, winning numerous championship and first prizes. The college stock judging team in competition with 17 teams won fifth place. Members of the team were P. J. Englund, Falun; R. Weimer, Fredonia; L. E. Howard, Hutchinson; J. R. Neale, Hutchinson, and B. M. Anderson, Manhattan.

The college won first and second prizes on two year old shorthorn steers and senior yearlings, and first on junior yearling shorthorn steer. Merry Dale, sired by Matchless Dale and owned by the college, was champion shorthorn steer, and also reserve champion in the two year old class of the entire show. The college won first prize on shorthorns, get of sire with all breeds competing, also first prize on shorthorns, group of five with all breeds competing. It took first on shorthorn herd. Matchless Dale sired all the prize winning shorthorn steers.

The college was awarded second prize on Angus calf, first on two year old Galloway, yearling, and calf; champion on Galloway; and first prize on Galloway herd. The Hereford herd won second in its class.

The college pen of three Duroc-Jersey barrows took first and the carload of fat hogs third.

GEARHART REMAINS AT HEAD OF ROAD DEPARTMENT SOCIETY

State Engineer Is Honored by Other National Associations Also

W. S. Gearhart, state engineer, has been reelected president of the Mississippi Valley State Highway Departments association. The meeting of the society, over which Mr. Gearhart presided, was held in Chicago Saturday.

Mr. Gearhart attended also the annual meeting of the American Association of State Highway Officials in St. Louis last week. He is a member of the finance committee of the association.

He was also at the meeting of the Northwestern Road congress. The program of this society contains an article on the Kansas highway department, illustrated with a picture of Mr. Gearhart.

PUT CORK SHOES ON DRAFT HORSE FOR COLD WEATHER

Animals May Be Kept from Falling if Proper Treatment Is Used

Draft horses should be equipped with good cork shoes in cold weather, according to David Gray, assistant in animal husbandry in the Kansas State Agricultural college.

"The shoe should have a heavy heel and toe," said Mr. Gray. "This will prevent the horse from falling, and will protect it from injury.

"The shoes should be examined frequently to see if the corks are adequate to help the animal. When it is necessary to shoe the horse with heavy corks, special attention should be given to setting the heel cork so that there will be no likelihood of injury to the animal.

"A horse used for riding or driving should not be shod heavily. Care should be taken that the corks do not protrude, for there is danger of injury when the horse is trotting."

TOADS IN YOUR GARDEN?

IF NOT, GET SOME—THEY'LL MAKE SHORT WORK OF BUGS

Each One of Them Is Worth \$19.44 a Season on the Cutworm Proposition—In Some Places Gardeners Buy Them

That toads are of economic value, particularly to the gardener, is the assertion of Dr. J. E. Ackert, associate professor of zoölogy in the Kansas State Agricultural college.

"It has been estimated that one toad is worth \$19.44 in a single season because of the cutworms it devours," said Doctor Ackert. "Approximately 88 per cent of the food of the toad consists of garden pests.

SLEEPS BY DAY—EATS AT NIGHT

"The toad is nocturnal in habit, coming out in the dusk to search for food, which consists mostly of insects and their larvæ. During the day it sleeps in its burrow made by backing into the soft earth or dense vegetation.

"The toads are of special value, since they are accustomed to live in gardens where insects are most injurious. In some sections of the United States the gardeners even buy them to aid in keeping obnoxious insects under control.

NO, THEY'RE NOT POISONOUS

"The popular belief that toads are poisonous is erroneous. They possess a rough, warty skin, which, however, does not cause the formation of warts upon the hands of those who handle them, as is often supposed. The skin of toads secretes a milky fluid which protects them from many animals that would otherwise be dangerous enemies.

"In the fall the toads work down into the earth where they hibernate during the winter. As soon as conditions are favorable in the spring, they emerge from their winter home and proceed to water to deposit their eggs, which are laid in long strings.

"In a few weeks, the eggs hatch into tadpoles. In this state they spend the spring. Gradually through the summer the legs develop, the tail is absorbed, and the tadpole develops into the adult toad, which takes up its abode in the fields and gardens."

WOULD TEACH IN PRISONS OUTSIDE STATE OF KANSAS

Home Study Department Has Requests from Many Reformatory Institutions

Kansas occupies the unique position of being the only state that extends its educational system to include the inmates of its prisons. Knowing this, Z. T. Trumbo, associate superintendent of the Illinois state reformatory at Pontiac, Ill., visited the agricultural college seeking aid for the institution of which he has charge.

The Illinois state reformatory has 1,000 boys between the ages of 16 and 25. Fourteen trades are open to the inmates and 500 acres of land are worked. The industrial exhibit from this reformatory was awarded the gold medal at the Panama Pacific exposition at San Francisco in 1915.

Mr. Trumbo, who has been connected with the institution for eight years, has come to realize that the boys should have scientific training as well as trade practice. Mr. Trumbo made the trip to Kansas to observe the work in the state penitentiary at Lansing and also in the federal prison at Leavenworth and to secure, if possible, the same service for the institution over which he has charge.

Five other states have asked similar aid for their penal institutions. In view of this great demand the home study department through its director, M. G. Burton, is asking that the service already in use in the state be extended to similar institutions outside the state.

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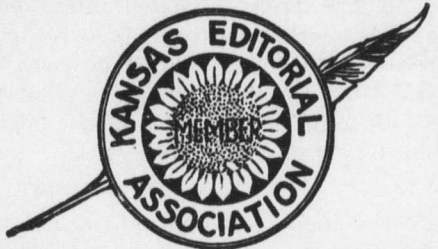
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WEDNESDAY, DECEMBER 13, 1916

PRESENT AGRICULTURAL PROBLEMS

The most important feature of the report of Dr. D. F. Houston, United States secretary of agriculture, which has just been made, is the recognition and stressing of the fact that problems of agriculture are no longer purely problems of soil cultivation. The pressing problems of agriculture are economic problems, problems embracing the marketing of farm products, rural finance, and rural organization.

It is recognized by the secretary that the domestic food supply of the nation should keep pace with the growth in population. With comparatively so small a population as the United States possesses in proportion to its territorial area, the country should be meeting not only its own needs but the needs of other countries as well. The secretary takes available statistics and points out the increase or decrease in the production per capita of the principal food products since 1899. Meat, dairy products, cereals, and potatoes have shown a decrease. Poultry, eggs, sweet potatoes, citrus and orchard fruits, and sugar have shown increases, in sugar the per capita production rising from 6.4 pounds in 1899 to 19.9 pounds in 1915.

The secretary points out that meats and dairy products constitute 37 per cent of the average diet; fish, 2 per cent; cereals, 31 per cent; Irish and sweet potatoes, 13 per cent; and other vegetables, 8 per cent. Fruits and vegetables, however, are occupying an increasingly important part of the permanent diet of the people.

"With all the agencies now available for improving agriculture," says Secretary Houston, "there is ground for optimism as to the ability of the nation not only to supply itself with food but increasingly to meet the needs of the world."

Where decreases have occurred in production per capita, it is altogether probable that difficulty has been experienced either in production or in distribution. With both problems the department of agriculture has concerned itself.

The increase of meat production in the United States has for a number of years been one of the principal aims of the department. The department has worked through efforts to check and eliminate diseases and parasites and to increase and improve stock raising by extending the industry where conditions are favorable and by pointing a way to better breeding and feeding. That it has been successful is indicated by the fact that beef production has materially increased since 1913.

There has been a steady advance in the number of swine since the census year 1899. Sheep are continuing to decline slightly in number, as in all but one other civilized country. The department is now urging farmers to

make use of waste land for sheep raising as is done in Great Britain.

With respect to marketing and rural finance, standards for cotton and for grain have been established, farm loans have been made possible, federal support has been given to roads, and numerous investigations have been made by the office of markets and rural organization. A survey of state marketing activities has been made, and plans are now in progress for the investigation of farm markets for American farm products and for assistance in the development of the export trade under normal conditions.

All these activities recognize farming not merely as a trade but as a business. The more general this recognition becomes the more profitable farming will be to the farmer and the greater service it will render to the nation as a whole.

ACTIONS AND WORDS

It is desirable and necessary that there be full discussion of a project before beginning to carry it out, but we have noticed that too frequently a movement never gets beyond the stage of discussion. Instances could be cited where the farmers of the neighborhoods discuss practically the same subjects at their meetings year in and year out and apparently dismiss the subjects with the adjournment of the meetings. Good roads, better schools, coöperation, improved social conditions, home improvements and all community problems are and have been discussed time after time but in too many instances the discussions are not followed by action.

It is so much easier to complain and say what ought to be than to go at it and correct the wrongs or create something new. When there is dissatisfaction with present conditions the next thing to do is to devise a plan for improvement and then set about making the improvement. Most of our public work is placed in the hands of public officers, elected by the people. These officials are not always chosen because of their special fitness for the position, but are frequently nothing more than place-seekers, or petty local politicians, yet the public elects them and then inconsistently finds fault because the public's interests are not best conserved.

But having inefficient officers is not sufficient excuse for a continuation of undesirable conditions. Even with the best of official direction, the public cannot wash its hands of all duty and responsibility. Let the granges, clubs and other organizations coöperate in forming helpful, systematic plans and appoint committees to urge them upon the officers and see that they are carried out and much good may be accomplished. We know communities that have thus redeemed themselves from intolerable road and school conditions and are now enjoying what they previously thought was unobtainable. It is frequently a question, not of more laws or better officials, but of a more united, constructive and active public sentiment that believes in deeds as well as words.—Pennsylvania Farmer.

FACES NATUREWARD

Civilization, with all of its advantages, has imposed artificial conditions which take us from our natural environment. The trend of civilization prematurely makes us old. The average youngster of 18 or 20 years is a grown-up and has the responsibilities that our grandparents had at 30.

Unfortunately, however, the responsibilities which life imposes at the present are not the strong, character-making ones of our forefathers. Those sturdy pioneers who blazed the trails into this vast wilderness were at one extreme; they were forced to undergo hardship and privation, yet their compensation was the communion with the things untouched by human hands. Those of the younger generation have swung on the pendulum of civilization to the opposite extreme; they have all the comforts of modern times, yet, as an antithesis, they must endure and even become a part of the gilded and tinsel falseness of convention.

There is but one remedy for the present condition and that is to recast

our thoughts toward the real, the hearty and the spontaneous—and these things alone can we find in nature. What the great majority of us need in our lives is not necessarily better rural life, but a better appreciation of rural life. As we go about our daily work the potential possibilities of a more complete appreciation is brought to us by friends who have learned to turn their faces natureward. With alert eyes they have discovered the simplicity of nature's secrets. Sincere and unassuming, untouched by bigotry and the false standards of life, their lives stand out as guiding stars for those of us who become entangled in the petty conventionalities that we have permitted civilization to impose.

When Thanksgiving time rolls 'round we give thanks for the year's many blessings but for none may we be more sincerely grateful than the lives of these folks who, through worthy example, teach us that the worth-while thing of life may be ours,

cold January day he drove about fifteen miles to the county seat to attend an institute when the total attendance was not over a dozen. He was always ready to listen and learn. He never poked fun at "book farming." He is sending his children to public school and his oldest boy attends the short courses at Manhattan.

To make a long story short, he is now worth close to \$50,000. He has immense barns, big cement silos, an excellent house and other improvements. He has a big herd of cattle and his farm is a model of thrift, a big money-making plant.

Does the story end here? By no means. The best part is to come. Money making is not the chief end of man, and Niemeir knows that. He once spent a half day at the county seat looking over pianos. He has installed a modern heating plant. Just last week he came to Wichita to investigate an electric farm lighting and power system. His home is a model of comfort as well as his barns

Secretary Graham lectured before the Riley county teachers at Randolph last evening, while Professor White performs a like service today.

The museum has received, through the kindness of Captain Morrison, some fine specimens of crabs and oysters from near Baltimore.

Professor Mayo has gone this week to Miami county, where an outbreak of hog cholera is raging. He will undertake experiments in this disease.

The three large classes in horticulture have been busy this week in grafting. The wax is convenient for cut fingers as well as to secure the grafts.

The mechanical department is preparing a set of blue prints of woodwork drawings used in our course for the use of the Delaware Agricultural college.

E. H. Kern, '84, took part in the annual meeting of the state horticultural society at Beloit. Although surveyor of Jewell county, his chief business is farming.

Professor Walters and Assistant Mason furnished papers for the State Horticultural society, though from pressure of other duties they could not attend the annual meeting at Beloit.

ON ROMNEY MARSH

M. E. Mason in the London Poetry Review

Out upon the marshes the free west wind is blowing,
Straight across the green ways, from the blue line of the sea.
All along the narrow dykes, where buttercups are golden,
Heavenly blue forget-me-nots are blinking up at me.
As I stir in passing the sheep forsake their browsing
And startled lambs leap out from their sheltered side and peer,
The heron leaves her nest, the water rat drops plashing,
The cuckoo to her loved mate is calling loud and clear.
The whistle of the west wind, the lark that rises singing,
The rustle of the sedge grass, the daisies gold and white,
The air all full of perfume from the blossom of the hawthorn,
The skies all full of music from morn until the night.
And—when the night is falling—out upon the marshes,
She folds them in her tender mists and hushes them to sleep,
But always—if you listen—you may hear the marsh frogs calling,
The wakeful cricket chirping and the soft bleat of the sheep.

Here are no chains that fetter, all earthly cares and sorrows
Hand in hand—for a little space—steal silently away,
Almost—I do believe—that in the chill pale dawning,
The blessed Christ Himself sometimes hath walked this way.

SUNFLOWERS

To the purist all things are poor.
A second-hand automobile is all right as far as it goes.
Some people are very dignified and others act natural.

We demand the segregation of people who enjoy Hawaiian music.
We know a girl that is thinking of getting married soon—constantly.

Good Joke for a Tombstone: Here lies a Golfer and a Useful Citizen.

Discipline is something that you get just after you decide that two can live as cheaply as one.

A WINTER COUPLET

Of all sweet words of tongue or pen,
The sweetest are these, you may sleep till ten.

LUCILLE'S DEFTY TO WINTER

Blow on, you rude and wintry blasts,
You cannot get my goat;
For see, my furs are packed away,
Earl Flynn says that it doesn't make a bit of difference how you whistle round my throat.

Kansas Graduates in the West

I. D. Graham

AS I hold the unbeaten record of attendance upon 33 consecutive commencements, so I hold the record of having read every issue of THE INDUSTRIALIST since its creation in 1874. I have never missed a number and I don't want to do so.

During my more than three years on the Pacific coast I think the one thing that bound me more firmly to Kansas than any other was the weekly visits of THE INDUSTRIALIST and when it took a vacation I was sure to get homesick.

Do you know that every dairy husbandman in the Pacific coast states is a Kansas State Agricultural college graduate? Do you know that every agricultural college in the coast and mountain states numbers Kansas State Agricultural college people in its working staff? Do you know that nine out of 13 county agricultural agents in Oregon and five out of nine in Idaho are Kansas State Agricultural college boys? Do you know that the anti-saloon law of Oregon, after which the Washington law was modeled, was written by a Kansas State Agricultural college graduate? Do you know that almost every town in the west that makes any pretensions of being a city, has one or more Kansas State Agricultural college people in the active ranks of business life?

A knowledge of what these boys and girls are doing to build up the empire of the west ought to make the old INDUSTRIALIST swell up with pride and I only wish that you might hear from each one more frequently and that their doings might show more strongly and more frequently in your columns.

too, by keeping our faces natureward and looking with eyes that see and appreciate and understand. In no clearer way can we grasp the tenets of the divine law of cause and effect. In no other way can we enjoy the blessing and the profit of an occasional brief course in self examination. In no surer way can we stand off and see things as they really are—ourselves included—and get a true general perspective. Nature does not lie to us and we can not deceive her too often without heavy penalties. The laws of nature are the laws of God and those who understand them and obey them will have full cause to be truly thankful for many years to come.—Ohio Farmer.

A FARMER WITH A VISION

W. H. Niemeir went out to western Kansas a few years ago with a small amount of money, enough to buy a quarter of cheap prairie land and build a small house and get a few cows. In central Kansas where land is around one hundred dollars an acre, he would be considered a poor man, because he wouldn't have enough acres to make a fair-sized wheat field, to say nothing of improvements.

Niemeir is a student. As he went along he took notice of every phenomenon of nature. For instance, one spring he ran his drill east and west over a wheat field which was threatening to blow away, and the dirt stopped flying. Not long ago he discovered that broom corn stalks make excellent ensilage.

There was never a farmers' institute that he did not attend. One bitterly

and silos. He had a vision. He knows that the best investment is in citizenship and he is going to make good citizens of his children—men and women who will stay on the farm and bring to it the best there is in life, from schools, colleges, churches, and refining influences of various sorts. W. H. Niemeir, of Gray county, does not preach to his neighbors. Perhaps it never occurs to him that he is fulfilling a mission. But he is a first class missionary.—Wichita Eagle.

A QUARTER CENTURY AGO

Items from The Industrialist of December 12, 1891

A heat will be run in the foundry next week.

A. J. and H. V. Rudy, '91, have bought a 40 acre fruit farm near Fresno, Cal.

Mr. Jenness, assisting in the revival meeting in Manhattan, led the chapel exercises on Wednesday morning.

Professor Nichols has completed the repairs to the dynamo, and will make an experimental run one day next week.

F. A. Waugh, '91, visited the college yesterday on his return from the meeting of the state horticultural society at Beloit.

Professor Lawrence of Colorado Agricultural college plans a visit here during the holidays, chiefly to inspect the new iron shop.

Miss Fanny E. Waugh, '91, teaching in the Menomonee (Wis.) high school, writes of her continued interest in the college and college people.

AMONG THE ALUMNI

Miss Eda Schowalter, '16, is teaching at Halstead.

Miss Edith Foltz, '14, is teaching in the high school at Blue Rapids.

A. E. McClymonds, '15, is with the American Pipe Line company at Caney.

Earl Friedline, '14, is designing a new domestic science building for the town of Alden.

Miss Amy Briggs, '16, is teaching domestic science and art in the Kinsley high school.

Mr. Wilbur S. Acton, '14, and Mrs. Acton are living on a large ranch near Arvilla, N. D.

Miss Florence Smith, '15, is in her second year of teaching domestic science and art at Great Bend.

Miss Mattie Kirk, '10, is president of the Chase County Sunday School association. She is living in Cottonwood Falls.

Mrs. Maude (Marshall) Patterson, '14, and son are visiting her parents, Mr. and Mrs. Marshall, 910 Moro street, Manhattan.

Mr. L. W. Grigsby and Mrs. Kate (Zimmerman) Grigsby, '00, are in Taft, Cal., where Mr. Grigsby is teaching in the high school.

Ralph and Ray Felton, '04, came in their car last Wednesday to attend Mrs. Wilder's funeral. They are farming near Dwight.

Wm. J. Marshall, '14, will receive his degree in Theology in early spring from Boston university and expects then to return to Kansas.

Mrs. May (Burt) O'Connell, '11, writes to have her name placed on THE INDUSTRIALIST list. Her home is now Round Oak Ranch, Coldwater.

Miss Pauline Parkhurst, '15, and Miss Mary Counter, '15, are teaching at Offerle. They have charge of a new high school building, three years' work, and 25 pupils.

Mrs. Annie (Logan) Kernohan, '13, and daughter have been visiting relatives and friends in Manhattan for a few days. Mr. George Kernohan, '12, is taking graduate work in the University of Kansas.

A. J. Wheeler, '11, is meeting with great success in his work in the Nashville Agricultural and Normal institute at Madison, Tenn. His work is highly commended by Dr. P. P. Claxton, United States commissioner of education.

F. K. Lee, '15, is connected with the Maui Agricultural company as assistant chemist at Paia, Maui, Hawaii. This sugar plantation is the second largest in the territory and expects to manufacture 39,000 tons of raw sugar in the coming season.

The Kansas State Agricultural college is well represented on the faculty of the Second District State Agricultural school at Russellville, Ark. C. G. Lueker, '16, is acting president, and C. H. Alspaugh, '09, is professor of horticulture and agronomy.

L. A. Richards, '15, leaves Friday for Manila, P. I., where he will be lieutenant in the constabulary. He was appointed to this office in the spring but, being a member of the national guard, obtained permission to perform service on the border as long as necessary. He returned to Manhattan a few weeks ago.

Miss May M. Anderson, '13, is supervisor of domestic science and art in the Winslow (Ariz.) high school and graded schools. Nearly 175 girls are enrolled in the classes and Miss Anderson is assisted by another young woman. The Winslow newspaper recently published a story praising the domestic science girls for a banquet given to the high school football team.

BIRTHS

Born, to Mr. F. A. Marlatt, '87, and Mrs. Annie (Lindsay) Marlatt, at their home on College hill, on December 5, a daughter.

MARRIAGES

SACHAU-FINDLEY

Miss Clara Sachau, '14, and Mr. O. Archie Findley, '11, were married Wednesday, December 6, at the home of the bride's parents, Mr. and Mrs. Henry Sachau, 908 Laramie street, Manhattan. After January 1, Mr. and Mrs. Findley will be at home in Kiowa.

ELLIOTT ON LONG WALK

Bert R. Elliott, '87, who for nearly 20 years has been mining gold in Alaska, tramped 350 miles over snow and ice in November and early December to make connections that would bring him to Manhattan for Christmas. He will spend the holidays with his mother and with his brother, F. B. Elliott, '87. He was in Dawson City during the past summer, and walked from that place to White Horse to take the Alaskan railway to Seattle.

FAMILY REUNION

The Cottrell family held its annual Thanksgiving reunion at the home of Mr. and Mrs. J. E. Payne, 1326 Houston street, Manhattan. There were present Mr. E. V. Nelson, former student, and Mrs. Jennie (Cottrell) Nelson, '04, with their children Joy, Philip, and Harold; Mr. A. J. Pottorf, '99, and Mrs. Lucy (Cottrell) Pottorf, '98; Miss Martha Cottrell, '94; Mr. E. L. Cottrell, '99; Mr. J. E. Payne, '87, and Mrs. Mary (Cottrell) Payne, '91, with children Amos, Nellie, and James.

Prof. H. M. Cottrell, '84, writes: "I hope that all the family living in Kansas met at Thanksgiving."

"I am on the road more than half the time. My territory covers the north half of Mississippi, eastern Arkansas, and western Tennessee. The work is the hardest that I have ever had, but it is intensely interesting and I like it better than any other work that I have ever undertaken."

KANSANS AT FLORIDA

The Jayhawkers have invaded the ranks of the faculty of the University of Florida, Gainesville.

The following alumni are now living in Gainesville: Mr. J. M. Scott, '03, and Mrs. Scott, '04; Mr. C. A. Hunter, '15, and Mrs. Hunter, '16; and Mr. and Mrs. O. W. Weaver, '11.

Prof. J. M. Scott has been connected with the Florida Agricultural Experiment station since 1907, having charge of the animal husbandry and agronomy work. In addition to this, he is assistant director of the experiment station.

Prof. C. A. Hunter, '15, has charge of the teaching work in bacteriology and botany.

Prof. O. W. Weaver, '11, has charge of the department of agricultural journalism and correspondence courses and is editor of the agricultural news service.

No other state institution is so well represented on the faculty of the University of Florida as is the Kansas State Agricultural college.

The University of Florida is the youngest state university in the United States, being only 11 years old. Although a young institution, it has made a marvelous growth. Professor Scott has been in close touch with the growth of the university since its beginning, when there were but two buildings on the campus. There are now 10 fine brick structures, a fine asphalt road and cement walks connecting all buildings.

The latchstring, writes a Gainesville alumnus, is on the outside for all alumni who may wander to the south for the winter.

FRED WALTERS KILLED

Fred Walters, '02, city engineer of Manhattan, was killed and his brother, Elsmere, was seriously injured Sunday morning when the Ford car in which they were driving turned over, one and one-half miles north of Morganville.

The young men, sons of Prof. J. D. Walters, head of the architectural department of the Kansas State Agricultural college, were on their way to Plainville, Kan., to deliver a new car,

a Christmas present from the father to a brother, Dan Walters, who lives at Plainville. Just how the accident occurred is unknown, as there were no eyewitnesses. Some boys discovered the overturned car and notified nearby farmers, who hastened to the scene. A relief party from Morganville soon arrived.

Fred, the older of the brothers, received a crushed skull and died soon after help arrived. Elsmere was still alive, although his back was discovered to be broken. He was rushed back to Manhattan and is in a hospital here.

The accident occurred on a stretch of road, north of Morganville, that has been the scene of three fatal auto accidents this year.

When the rescuing party arrived, Fred Walters was lying underneath the overturned machine. Elsmere was lying to one side of the road and was first believed dead.

Mrs. Fred Walters, wife of the dead man, had intended to make the trip to Plainville but the cold weather Sunday morning prevented.

It is supposed that the wheels of the car were diverted from the road by two deep ruts, and overturned. The machine was wrecked, the right front wheel and the left rear wheel being broken off at the axle.

CHORAL SOCIETY WILL GIVE GREAT ORATORIO

Handel's "Messiah" to be Presented Next Sunday Afternoon—Out-of-Town Singers to Come

Handel's "Messiah" will be presented in the college auditorium at 4 o'clock Sunday afternoon as the second annual concert by the Choral society. Choruses from Clay Center and Randolph will sing with the local chorus. Thomas Remington of Chicago, baritone, will assist. Admission will be free to the general public.

Soloists will include Miss May Carley, contralto; Miss Faye Richards, soprano; and Elton Calkins, tenor—all of the college department of music. Miss Patricia Abernethy of the department will be at the piano, and the college orchestra will assist.

The chorus has been practicing for weeks under direction of Arthur E. Westbrook, head of the department of music. Three hundred persons will participate in this musical event.

By musical critics, Handel's "Messiah" is considered the greatest of oratorios. It was composed between August 22 and September 14, 1741, when Handel was 56 years of age. In 1789 Mozart composed his additional accompaniments to it, now regarded almost as an integral part of the composition.

LETTERS SHOW KANSAS HEN AS FARMER'S LIFE SAVER

Has Produced Profit in Time of Crop Failures and Other Reverses

That the Kansas hen has been a life saver to the farmers who have experienced crop failures and other reverses, is indicated by letters received by the poultry husbandry department in the Kansas State Agricultural college.

The farmer's wife usually has the poultry under her supervision and she has contributed a big share to the family finances. One woman in western Kansas reports a net profit of \$200 on her poultry in the last 11 months.

"A well bred healthy hen, properly nourished, will lay 120 eggs a year, while the average fowl will produce from 60 to 80 eggs," said Ross M. Sherwood, acting head of the department. "Some farmers figure that the hen earns her board in destroying weed seeds and injurious insects."

"The reason why some hens are not more productive is because they are not properly nourished. It is just as important to feed a balanced ration to the hens as to the hogs and cows. Particularly is this important in winter. The food problem does not require so much attention in the summer, for the hens forage on the farm and get a variety of diet. In any season the fowls should go to roost with full crops."

WORMS AGAIN A MENACE

KANSAS FRUIT AND SHADE TREES WILL BE THREATENED IN 1917

Vigorous Effort Should Be Made to Combat Insect, Warns Entomologist—Few Other Pests Injurious to Fruit Prevalent this Year

That cankerworms will menace the lives of Kansas shade and fruit trees in 1917 unless a vigorous effort is made to combat the insects, was the opinion expressed by George A. Dean, professor of entomology in the Kansas State Agricultural college, before the State Horticultural society in Topeka.

"Injury done by the cankerworm last spring was again severe over a large portion of the state," said Professor Dean. "In many cases elms, hackberries, and large numbers of fruit trees were completely defoliated. Many trees died in the summer, while others were weakened and thus rendered susceptible to the attack of wood borers. The cankerworms are almost certain to prove serious next season."

With the exception of the cankerworm infestation there were few serious outbreaks of insects injurious to fruits, pointed out Professor Dean.

LOOK OUT FOR BORERS

It should be remembered, however, he cautioned, that wood borers, particularly the bark beetles, are likely to prove more serious to trees following a dry, hot summer. It is an admitted fact that borers prefer the weaker trees, and thus trees that were checked in their growth or stunted by adverse conditions such as prevailed last summer, are rendered susceptible to attack. These trees should be watched and protected. If for no other reason than the future control of borers, all fruit trees should be given the proper care to keep them healthy and vigorous.

"The department of entomology," said Professor Dean, "has given much attention to the fruit growing interests in some of the northeastern counties in the past year. Many orchardists were furnished with directions for spraying, and the work in several orchards was conducted under the supervision of the department."

FINANCIAL RETURNS INCREASED

"This work not only has aroused much interest, but has succeeded in getting a large number of orchardists to spray, prune, and cultivate their orchards properly. Greatly increased financial returns have been reached by those who have adopted modern methods in handling their orchards."

"The inspection of areas infected with San José scale shows that the rapid progress of this insect can be checked and its damage greatly reduced. Because the funds for this purpose were limited, a property-to-property inspection of all San José scale infested districts was not permitted. Such an inspection, however, was made in North Topeka, where an infestation was found the previous year. This inspection did not reveal any scale, indicating that it was eradicated by the previous complete cutting and burning of all infested trees and shrubs."

TELLS WHAT CARE IS NEEDED BY FALL PIGS

Ray Gatewood Explains Necessity of Proper Feed, Comfortable Housing, and Ample Sunshine

Proper feed, dry, comfortable sleeping quarters, and plenty of sunshine are the three most important factors in caring for fall pigs in winter, asserts Ray Gatewood, instructor in animal husbandry in the Kansas State Agricultural college.

"The feed should be of such a nature as to produce growth," said Mr. Gatewood, "and at the same time be as economical as possible. Such feeds as corn, shorts, tankage, alfalfa hay, and milk are desirable."

"Both corn and tankage should be given in rather limited quantities. The shorts may be fed rather liberally but care should be taken not to

mix the feed in too sloppy a form, as this tends to get the pigs wet and is likely to result in pneumonia. Small pigs in comparatively large numbers will nearly always pile up at night, causing them to steam. When pigs in this condition are exposed to cold wind and draft, serious trouble is likely to result.

"Alfalfa hay should be available at all times. The last cutting is most desirable for this purpose and should be in as good condition as possible. It not only is conducive to growth but tends also to increase their digestive capacity. In Kansas it is one of the cheapest and best feeds for pigs as it produces desirable results at a low cost, provided it is properly supplemented."

"Skim milk and butter milk, where available, are desirable feeds for the young pig. They should be fed regularly in clean troughs."

"The fall pigs should be separated into comparatively small groups according to age and size. In this way they may be fed to much better advantage as each pig will get his share and there will be less trouble in the sleeping quarters."

"They should have plenty of room in a dry, well ventilated house with plenty of bedding free from dust. Sunlight is one of the most valuable assets to young pigs. Pigs should have the run of a dry, clean lot and be encouraged to take plenty of exercise."

ARE OPTIMISTIC OVER 1917 FOOTBALL TEAM

Coaches Believe Prospects Are Bright for Missouri Valley Championship—Only Four Men to Leave

"Couldn't be better."—Z. G. Clevenger, head coach.

"Fine."—Adolph (Germany) Schulz, assistant coach.

Aggie football coaches are enthusiastic in speaking of 1917 prospects. With only four old men completing their college work this year—Captain Barnes, Bayer, Wright, and Skinner—and with star freshmen and second string material from which to pick, the coaches cannot help but feel encouraged.

The backfield will be made up almost entirely of veterans. Husted, Wells, and Clark probably will fill their old positions at half, full, and quarter. L. Ptacek, this year's substitute halfback, and Yeoman and Miller of the freshman squad will compete for the other halfback position filled by Captain Barnes this season.

The strong line of this season will be weakened materially by the loss of Bayer, guard, Wright, center, and Skinner, end, all of whom were mentioned for positions on the all-valley team this year. But with such freshmen as Gates, Fletcher, Hedrick, and Dale to take the places of these men their loss will not weaken the team to any great extent. Other men, like Enlow, Marshall, Gingery, Frankenhoff, and Guilfoyle, will strengthen the team. Hamil, an end on the 1915 freshmen squad, may fill Skinner's shoes as he is expected to reënter school next fall. He is expected to make a good running mate for "Stiff" Randels, new captain and probably the best end in the Missouri valley. It will take a good man to run the Aggie ends with that combination.

"The Aggie men are now thoroughly familiar with the present coaching system and with one year's experience there should be no stopping the team next fall," said Coach Clevenger. "Hopes run high for a Missouri valley championship team."

Since Kansas has demonstrated the fact that Nebraska can be humbled, four Missouri valley conference teams—Missouri, Kansas, Ames, and the Kansas Aggies—will fight for championship honors next year. Kansas will have a team composed mostly of old players, Missouri will lose five of her letter men, whose positions will be hard to fill. Ames as usual will put a strong eleven in the field, with a possible chance that Drake and Washington will upset the dope.

HOW SPEND ROAD FUND?

FEDERAL MONEY AVAILABLE PRODUCES DISCUSSION IN STATE

W. S. Gearhart Explains Provisions of Law—Counties Must Provide at Least Equal Sum if Kansas Takes Advantage of Appropriation

How the \$143,207.40 now available through the federal aid road act for road improvement in Kansas will be spent is a question being asked by many persons. It is discussed by W. S. Gearhart, state highway engineer.

"The federal road appropriation will be increased approximately \$143,207 each year for five years," said Mr. Gearhart. "In this period \$2,150,000 in round numbers will be forthcoming from the government for road purposes in Kansas."

TWO YEARS ARE ALLOWED

"The money now available may be used any time prior to July 1, 1918. In other words, the state has two years in which to spend each annual appropriation. If the money is not all spent within this time it reverts to the federal government to be reapportioned among the other states."

"The federal government cannot pay to exceed 50 per cent of the expense of improving any road. The remainder must be provided from state or county funds. Since the constitution of Kansas prohibits the appropriation of state funds for highway work it will be necessary for the counties to provide at least 50 per cent of the money if Kansas is to take advantage of this federal aid. The counties can meet the requirements of the act either by means of the county road fund or by the Hodges benefit district law enacted in 1911."

WHAT LAW SHOULD DO

"It is intended that the federal aid road act shall accomplish three things. It will stimulate interest in substantial road improvement. Better methods of road construction and maintenance will be practiced. It is intended to encourage the adoption of an adequate system of highway management in each state."

"The accomplishment of these objects will be affected materially by the number of miles of road built in the state, and the amount of highway improvement that can be made depends largely upon the funds available. This brings up the problem then as to what percentage of the cost of the improvement should be paid by the federal government."

WHAT PER CENT OF AID?

"Is 50 per cent federal aid necessary to accomplish these objects, or will a less percentage of aid, and a larger mileage of substantial road be of more benefit to the state? Several counties in making application for federal aid have indicated that they thought 25 per cent federal aid and 75 per cent county, township, and benefit district funds would be about right. One county has stated that if it could get 25 per cent federal aid the county could and would provide the other 75 per cent of the cost to build a road anywhere it was needed in the county."

"Since approximately \$2,150,000 will be available for Kansas from the federal government in the next five years, if the federal aid be fixed at 50 per cent, the counties providing an equal amount—a total of about \$4,300,000 would be available for this period. If the federal aid were fixed at 25 per cent, the counties providing 75 per cent, there would then be available a total of \$8,600,000 in this five year period and twice as many miles of substantial roads could be built as under the former plan."

IMPROVE PRINCIPAL HIGHWAYS

"The highways of the state may be classified according to their relative importance as interstate or national, state, county, and local roads. It has been suggested that the highways to be improved with federal aid should be the principal roads of the state; that is, interstate roads having the greatest public utility."

"From published statements of the secretary of agriculture, it is clearly

evident that it will be considered unpractical by the department of agriculture, and not in harmony with the spirit of the act to distribute a part of this small appropriation to every county in the state, for no county would then receive a sufficient amount to accomplish anything, and the administrative expenses for construction and maintenance would be out of proportion to the amount of work done."

BASKETBALL SEASON TO OPEN TWO WEEKS SOONER

Missouri Valley Conference Adopts New Ruling—Football Schedule Is Still in Making

The basketball season in the Missouri Valley conference will begin December 15 hereafter instead of in January, according to the new ruling adopted by the faculty representatives at their semiannual meeting in Manhattan Friday. Dr. W. M. Jardine, dean of agriculture, represented the college.

The football schedule is still in the making. It is hoped by the Kansas State Agricultural college to schedule at least four games with conference teams for next fall, although but two games are certain—University of Kansas at Manhattan and University of Missouri at Columbia. It is expected that Ames will be in the list. A committee of three will report on the question of minor sports in the conference at the meeting next May and another committee will consider gymnastics.

A strong sentiment was expressed in favor of holding intercollegiate freshman contests, but when it came to a vote the proposition was turned down by a close vote. It was believed that freshman contests would stimulate interest in athletics.

Hereafter the Missouri Valley conference will pay for all trophies in Missouri valley events. The next December meeting will be held in Kansas City, and the chances are that this session will be held there permanently. The May meeting will be held at the time and place of the Missouri valley track meet as in the past. The expected application of Oklahoma for admission to the conference did not materialize.

Athletic events by the college already scheduled in basketball are as follows:

January 23-24—K. U. at Lawrence.
February 2-3—K. U. at Manhattan.
February 9-10—Washington at Manhattan.
February 14-15—Nebraska at Manhattan.
March 2-3—Missouri at Columbia.
Baseball games:
April 9-10—Missouri at Manhattan.
April 27-28—Nebraska at Manhattan.
May 2-3—Missouri at Columbia.
May 16-17—Nebraska at Lincoln.
May 23-24—K. U. at Lawrence.
June 1-2—K. U. at Manhattan.
Track meets:
February 16—K. U. indoor meet at Lawrence.
April 21—Drake relay games at Des Moines.
May 4—K. U. dual meet.

AUTUMN IS BEST TIME FOR PURCHASING A STALLION

Buyer Will Find Many Good Animals from Which to Select

Fall is the best time to buy a stallion. A prospective purchaser will find more and better stallions now from which to make his selections than at any other time of year, according to C. W. McCampbell, associate professor of animal husbandry in the Kansas State Agricultural college.

"The buyer not only will have more time to become familiar with the peculiarities in disposition of the stallion but will have more time to train and educate him," said Doctor McCampbell. "The stallion will have longer in which to become acclimated and accustomed to his new surroundings. Approximately 500 stallions are purchased annually by Kansas buyers. Many of the failures and disappointments that occur each year could be avoided if these suggestions were given more thoughtful consideration."

WILL CUT FOOD COSTS

CHEAPER NITROGEN WILL MAKE LARGER PRODUCTION POSSIBLE

There's Enough of Fertilizing Element in Air Over Each Acre of Ground for 50,000,000 Bushels of Corn, Estimates Chemist

That the air over each acre of land contains enough nitrogen to produce 50,000,000 bushels of corn is the assertion of C. O. Swanson, associate professor of agricultural chemistry in the Kansas State Agricultural college.

"Chemical analysis of Kansas soil," said Professor Swanson, "has shown that the land in continuous cultivation for 40 years has lost from one-fourth to one-third of the nitrogen originally present in the prairie soil. This loss, one of the chief factors in the decrease of crop production, is somewhat obscured by better cultivation and better choice of seeds, but will become more serious as time progresses."

NITROGEN SUPPLY INEXHAUSTIBLE

That legumes can utilize the nitrogen from the air and thus replace that removed by crops has been known for a long time but with the increase in the price of land and the pressure of a growing population search for other methods is stimulated, points out Professor Swanson. If nitrogen can be made cheaper as a fertilizer than it now is, larger food production will be possible.

The supply of nitrogen is inexhaustible. The knowledge of methods used in fixation of nitrogen has made rapid progress in recent years and it may be that one of the greatest benefits to come to the United States from the present European war will be the stimulus given both to private and governmental operation of this industry.

FOR EXPLOSIVES AND FERTILIZER

Nitric acid is an absolute necessity in the manufacture of high explosives. Congress appropriated \$20,000,000 a plant for the fixation of atmospheric nitrogen. The nitrogen, obtained as nitric acid, is to be used in the manufacture of explosives when needed, and in times of peace for making nitrogenous fertilizers. In addition this nitric acid will be useful in making acid phosphate.

Experts have estimated that such a plant should have a capacity of not less than 180,000 tons of nitric acid each year in times of war. In times of peace this nitric acid is to be used in making commercial fertilizers.

SULPHURIC ACID NOW USED

Phosphorus, used in larger quantities than any other element in commercial fertilizers, is now made soluble by the use of sulphuric acid. This acid gives no added value other than making the phosphorus soluble and is a large item of expense, according to Professor Swanson.

If nitric acid is substituted for sulphuric the nitrogen in the acid is of added value to the fertilizer. Every pound of nitrogen in the form of nitrates is now worth from 20 to 25 cents a pound.

It is largely due to the fact that Germany makes use of atmospheric fixation that she has not been conquered, as her usual sources of supply are cut off. The possibility that the United States' present source—Chile, South America—might be cut off in time of war led to the plan of erecting a plant for the fixation of atmospheric nitrogen.

NEEDS WARM, DRY PLACE FOR STORING PUMPKINS

Grower Should Also Look Out for Free Circulation of Air—Some Suitable Locations

In storing pumpkins, the chief requisite is a dry place with a temperature of more than 50 degrees, asserts M. F. Ahearn, professor of landscape gardening.

"Pumpkins are picked in time to be used for Thanksgiving," said Mr. Ahearn. "Pumpkins are cut off about 1½ inches from the vine to avoid injury. In places where they are grown

extensively, they are stored in special stove heated houses, and placed on shelves or bins. Only good sound fruit is stored—fruit which is free from bruises and cracks, stems on, and not frosted. A free circulation of air about the plants is desirable.

"For home storage, a slatted crate close to a chimney in an upstairs room that is kept warm both at night and during the day is used. Suspending a basket from the ceiling in the furnace room will give good results. In Kansas, a sweet potato house may be used for this purpose."

"When marketed early, pumpkins are stored by piling them in the field and covering them with leaves and straw, or storing them in a dry cellar."

SHOW COLLEGE SPIRIT IN REMAKING OF FIELD

Students and Faculty Members Toiled Side by Side in Work Thursday on Athletic Park

Never in the history of the Kansas State Agricultural college was more enthusiasm shown and college spirit displayed than last Thursday—Field Day—when clad in working attire and armed with picks, shovels, and spades, students and faculty members toiled side by side on the college athletic field.

It was no farce, as some doubters among the students had anticipated. Encouraged by the example of members of the faculty, who in many cases worked with the effectiveness of professional ditch diggers, the students performed their respective tasks in such a manner that a transformation was accomplished little short of marvelous.

Dr. Henry J. Waters, president of the college, was here and there and everywhere, directing work, and even showing individual students how to handle a shovel or a pick. Dr. J. T. Willard, who had much to do with organizing the army of workers, was in overalls and red bandanna. Preparation for the work of the day had been made by L. E. Conrad, professor of civil engineering.

The gridiron was tiled, and to make sure that it will be high and dry in the future it was graded in turtle-back style. Next spring it will be sodded, and is expected to rank with the best fields in the Missouri valley.

A new field was constructed immediately north of the gridiron, which will be used for general athletics. Tractors furnished power for plowing the hillside at the north end of the new field. Fifteen or 20 teams hauled the earth, which was shoveled into wagons by students, to the lower end of the field. It was necessary to change the course of the stream that ran through the north side of the field.

In the course of the morning tables were put in place on the field and at noon lunch, which had been prepared in the domestic science laboratories, was served by co-eds.

WATER TANK INSIDE BARN LESSENS FEEDING LABOR

May Be Built of Cement and Adapted for Ready Cleansing

A water tank on the inside of the barn will lessen the labor of feeding in winter, according to David Gray, assistant in animal husbandry in the Kansas State Agricultural college.

"If the barn is reasonably warm, the water will not freeze," said Mr. Gray, "and the stock will drink more of it when it is not ice cold."

"When the tank is out of doors, much time is wasted in chopping ice. Unless the stock drink immediately, the water soon freezes again."

"Artificial warmers for tanks have been used with some success, but bringing the tank inside the barn eliminates the necessity of heating."

"The cement tank is satisfactory for inside purposes. It should be wider at the top than at the bottom, and the walls four inches in thickness. A draw pipe should be placed underneath the tank so it can be emptied frequently and cleaned. A tank of this nature is less likely to freeze than any other kind."

IT KEEPS TYPHOID AWAY

VACCINATION IS REASONABLY SURE PREVENTIVE, SAYS BUSHNELL

Discovery Has Enormously Reduced Number of Cases and Deaths, Points Out Bacteriologist—How Immunity Is Produced

Persons living in a community in which cases of typhoid fever have developed should be vaccinated at their earliest opportunity, according to L. D. Bushnell, professor of bacteriology in the Kansas State Agricultural college.

"There is no law compelling persons to be vaccinated," said Professor Bushnell. "If anyone desires to be vaccinated for typhoid fever he must apply to his physician. Vaccination is a reasonably sure method to avoid typhoid but its effectiveness depends to some extent on the strain of organism used for making the vaccine."

CAUSES SLIGHT INCONVENIENCE

"Vaccination against typhoid fever consists of the injection of several drops of vaccine under the skin of the arm. Three injections, given at 10 day intervals, are sufficient for immunization. Slight local pain may follow the injection. In a few cases headache may result."

"The fluid used for vaccination contains the bodies of the typhoid bacilli, killed by heat. When the vaccine is injected into the body the blood stream gradually absorbs the toxins dissolved from the bodies of the dead typhoid bacilli. After a sufficient amount of these toxins has been absorbed by the blood the individual becomes immune to typhoid fever."

WATER DISSEMINATES DISEASE

"Water probably is the most common disseminator of typhoid, for many persons use water from the same source. Milk serves to scatter typhoid more than any other food. Flies play some part in the distribution of the disease especially where they have access to the excreta of individuals that have the disease."

"At the San Antonio army maneuvers in 1911, 12,800 soldiers were vaccinated for typhoid fever, and of this number only one developed the disease. This one man had not been completely inoculated at the time he became sick. His case was a mild one, due to the fact that he had been partially inoculated. While the maneuvers were in progress at San Antonio there were 19 deaths among citizens from this disease, which shows that the soldiers had ample opportunity to be infected."

DEATH RATE TO ZERO

"During the Spanish-American war, 20,738 cases developed in our army of 107,973 men and 1,580 deaths resulted. None of these men had been vaccinated against typhoid fever."

"These figures show that among the soldiers who had been vaccinated only .78 per cent contracted the disease, while in the case of those who were not vaccinated 19.20 per cent contracted the disease. In the case of the non-vaccinated men the death rate was 7.61 per cent, while of those who had been vaccinated before becoming sick none died."

PERSIMMON WITH FEWER SEEDS IS COLLEGE PLAN

Horticultural Department Believes Fruit May Become Popular—Is Coffee Substitute in Tropics

The horticultural department of the Kansas State Agricultural college is making a study of persimmons with a view to propagating the variety of fruit that has the best flavor, the fewest seeds, and the best general appearance.

It is believed this fruit should become popular. Many persons consider it a delicacy just as picked from the trees, while others prefer it in the form of preserves or dried and cooked. The seeds of both native and Japanese varieties are dried and ground and used in southern countries as a substitute for coffee.

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Number 13

TO RESCUE FARM LIFE

HENDERSON MARTIN SOUNDS CALL FOR AGRICULTURAL LEADERS

Vice Governor of Philippines Makes Eloquent Address on Choice of Occupation—President Waters Confers Degrees on 60 Candidates

Rescue agriculture before it passes into a secondary position in American life, urged Henderson S. Martin, vice governor and commissioner of education of the Philippine Islands, in an eloquent address at the Christmas commencement exercises of the Kansas State Agricultural college Wednesday morning.

More than 60 students received degrees at the convocation. The candidates were presented by the deans of the divisions, and the degrees were conferred by Dr. Henry Jackson Waters, president of the college.

Attractive musical numbers were given by the college orchestra and Elton Calkins, instructor in voice.

CHANCE TO PLANT IDEAS

Vice Governor Martin spoke on the subject, "Choosing an Occupation." He traced interestingly the rise and decline of agriculture in various civilizations, and pointed out effectively the dangers confronting it in the United States. He made a strong appeal for agriculture as a field for young people of high ability. He urged that they become advocates of American agriculture, pointing out that if they did not care to plant corn they might plant greater crops—ideas.

"Two things justify me in exalting agriculture," said Mr. Martin. "The first one is the fact that it feeds the world; it makes possible the multiplication of human beings and a progressive human society. The second fact is that the country is the only good breeding ground for men and women, and agriculture leads men and women to the country."

HOW AGRICULTURE DECAYED

"But for me to take your time to argue the importance of agriculture would be to take your time to argue a case which for a thousand years has been adjudicated. Aristotle taught his classes that laws should be passed prohibiting more than 10,000 people from congregating in any one city. Justinian actually passed laws prohibiting the growth of cities beyond a certain size. In the sixteenth century, laws were passed prohibiting the further growth of London and of Paris. In more than one country of Europe laws have been passed prohibiting country dwellers from becoming city dwellers without the consent of the government."

"Statesmen and philosophers in every age have recognized the supreme importance of agriculture, of country life, and have tried to promote its interests, but in spite of their efforts, the history of agriculture is a history of decay—a history of defeat after defeat."

"The proof is overwhelming. In the ancient world agriculture went from first place to last place. It is difficult to draw a lesson from the orient but there was a time when the farmer in the orient was the proudest among the proud. He is now the humblest among the humble. The farmers of India raise wheat but they eat millet and pulse. The farmers of the orient raise rice but they raise it for other men's tables."

ARE TRAVELING ANCIENT ROAD

"In Europe, some centuries ago, agriculture led the industries. At this time, with one or two exceptions, Europe has no country where agriculture can rightly be classed among the chief industries. In our country, we are traveling the same road. We are following behind the ancient, behind

the people of the orient and of Europe. If we travel the same road, it is inevitable that we shall reach the same destination.

"The business I am suggesting to you is the business of saving American agriculture before it is too late as it is too late in the orient and in Europe."

"The man who examines current prices for agricultural products might conclude I am unduly alarmed. He might conclude that agriculture is in no need of rescue but the truth is that a temporary increase in agricultural prices no more means a revival in agriculture than the appearance of the sparrow means a return of spring. So likewise, the man who compares our present agriculture with our agriculture of 10 years ago or 20 years ago or 50 years ago might conclude that there is no need of a rescue, but the man who compares the course of American agriculture with the course of American manufacturing or American transportation or any other of the great American industries, will share in the alarm and will join in the cry for a rescue."

THIS THE TIME AND PLACE

"Swiftly American society is passing from an agricultural society to an industrial society and my suggestion to you, young men and young women, is that you make it the business of your life to rescue agricultural society."

"This is the time and here is the place. This is the time because we have a little abnormal prosperity in agriculture and a demand could be supported by a little power. This is the place because Kansas is the most enlightened agricultural community in the world."

"The undertaking, at best a difficult one, is an undertaking that was too big for the ancients, that was too big for the orientals and for the Europeans, and that has been too big for our own fathers. It will prove big enough for us."

MUST READJUST FARM REWARDS

"After what I have said I could not complain if you asked me to be more specific, if you asked me to point out some of the ways in which you may take part in the great work I have suggested. The question is of the utmost difficulty, and the man who would answer categorically must pretend to a wisdom which I frankly admit that I do not possess. But in this world we cannot wait until we have all the facts. We must act. In the matter in hand we must act on such information as we have."

"We have facts enough to know that if we are to save agricultural society, there must be material readjustment of rewards. Farming must be made as profitable and as attractive as other lines of business."

LEADERSHIP TO THE COUNTRY

"Conditions must be such that a due proportion of our financial leaders will be among the men whose business is farming; that a due proportion of our intellectual leaders will be among the men whose business is farming; that a due proportion of our social leaders will be among the women who live on the farm."

"Your opportunity for service and for success is in bringing about such conditions, but let me warn you not to fool away your time. No trifling, no trimming, no milk-and-water policies will be sufficient. The remedy, the only remedy, is a series of surgical operations. Unless you can get a vision, a passion, I do not advise you to return to the farm. I advise you to take up some calling where mediocrity is more in demand."

CONSTRUCTIVE EFFORT IS NEEDED

"In an effort to promote agriculture, it is a mistake to attempt to drive other people from the banquet. Fight—

(Concluded on Page Four)

STUDENT MAKES ENGINE

EACH MAN OBTAINS PRACTICAL SHOP PRACTICE

May Purchase What He Builds, at Cost of Materials—Apparatus S Suited to Driving Forge, Saw, or Other Machinery—Carlson's Design

Small gas engines designed by W. W. Carlson, superintendent of shops in the Kansas State Agricultural college, are being manufactured by students of the division of engineering. This addition to the courses in the shops was planned last year with a view to giving the students practical work that would be both interesting and instructive.

While the engine is not patterned after any small engine on the market, no system has been used that has not proved successful. The construction is so simple that first term students can make every part.

The engine is of the four cycle type, with jump spark, hit and miss governor, and either a tank or a hopper cooling system. The bore is 3½ inches and the stroke five inches.

TWO HORSEPOWER CAPACITY

The engine complete, when set up on skids, weighs approximately 225 pounds. When running at 600 revolutions a minute it will develop two horsepower, which is sufficient for any handy farm engine.

The accessories include a mixing valve of Kansas State Agricultural college design, made in the foundry with the other parts of the engine. A standard half-inch spark plug is used and the current supplied by a storage battery. A magneto probably will be added later as regular equipment.

While at present the engine is made only for the water cooling system, plans are practically complete for substituting an air cooled cylinder. This will reduce the weight materially and eliminate all danger of freezing in cold weather. The successful cooling by air will be accomplished by means of a double exhaust and an elaborate system of cooling ribs.

INTERCHANGEABLE PLAN USED

Every part is made on the interchangeable plan, so that any piece will fit in its proper place on every engine. This uniformity of the completed parts is accomplished by means of an accurate system of limit gages, jigs, and fixtures that enable the beginner to finish a part as accurately as an experienced man.

Much of the machine work is done with grinding machines such as are used on the parts of automobile engines. Many of the parts are ground to the thousandth part of an inch. The college shops are equipped with the necessary tools, machinery, and materials to carry on the manufacture of these engines and maintain a regular output.

EMPLOYS FACTORY SYSTEM

A regular factory system has been devised for handling the different parts of the engine under the personal supervision of Professor Carlson. A certain number of the various parts are ordered from the foundry to be cast by a certain date, and to be delivered to the store room, which is under the supervision of a store room clerk. From the store room the parts are checked out to the stock room in the machine shop, where each week the number of the parts that have been finished is posted on the production board. The new pieces are then filed away in the stock room.

Finishing the parts is done in the shop with positive limit gages. This insures the interchangeability feature, so they may be assembled on any engine. When enough of the different parts of the whole engine have been completed, they are removed to

the place where the engines are assembled, tested, and put into perfect running order.

TO BUILD 50 WINTER TERM

A production order for 50 engines has been issued and it is expected that the entire 50 will be completed in the winter term when the shops are crowded every hour of the day by the engineering short course students, who will begin work January 8. Regular engineering students will have charge of the short course students to a large extent. They will act in the capacity of gang and speed bosses.

Each student will be allowed to buy the engine he makes, at the cost of the material. This is so low that it is not expected that any student will fail to buy. The engine may be used for driving a forge, grindstone, saw, and other shop machinery on the farm or in the city.

DOCTOR SCHOENLEBER HONORED BY COLLEGES

Veterinary Institutions Make Him President of Association for Fifth Successive Time—Next Meeting in Kansas City

Dr. F. S. Schoenleber, professor of veterinary medicine in the Kansas State Agricultural college, was re-elected president of the Association of State and Provincial Veterinary Colleges at the meeting in Chicago. Doctor Schoenleber has been head of the organization for five years.

The association comprises veterinary institutions under state or other governmental control in the United States and Canada. At the recent meeting problems of standardizing the curriculum in veterinary medicine were taken up. The next meeting will be held in Kansas City next fall.

NEW PLANS STRENGTHEN WORK IN DOMESTIC ART

Students Are Taught to Make Articles Useful to Them Individually

Plans carried out this year have strengthened the work in domestic art in the school of agriculture, according to Miss Mildred French, in charge of that department in the Kansas State Agricultural college.

"The problems have been changed so that not only are the underlying principles learned but interest is aroused through the making of useful articles which more closely meet the needs of the individuals," said Miss French.

"There has been a close correlation between the sewing classes and the classes in color and design, textiles, and chemistry, and the application of the principles learned in each has created greater interest and brought out individuality in the students."

"The beginning classes this term showed their originality and close application to principles taught, by designing and drafting aprons. These aprons are no common white garments, with lace and ruffles, such as have been worn by women for generations past, but are original in design, and taste and personality are displayed from the selection of the material to the blending of harmonious colors and embroidery designs. The girls applied the principles they learned in color and design as well as in domestic art in fashioning the aprons."

These aprons, together with work from the other classes, will be on display in the home economics building Farm and Home week, February 5 to 10.

Many of the county agents in Kansas are conducting blackleg vaccination demonstrations. At a recent demonstration held in Cloud county by Karl Knaus, county agent, several farmers were present who are now vaccinating their own hogs.

TO DOCTOR FARM ANIMAL

CARE MUST BE TAKEN IN ADMINISTERING REMEDIES

Drugs Are Usually Given Through the Mouth or by Hypodermic Injection—Treating Horses, Cattle, Sheep, and Swine

Medicine may be administered to animals through the mouth, by injection under the skin or into the blood stream, or in rare cases through the rectum, according to Dr. R. R. Dykstra, professor of veterinary surgery in the Kansas State Agricultural college.

"The administering of drugs under the skin or into the blood stream requires the use of a hypodermic syringe and a needle," said Doctor Dykstra. "Drugs administered by this means must be perfectly soluble, non-irritating, and in concentrated form."

SELECT SUITABLE PLACE

"If the medicine is injected under the skin, some place is selected where the skin is comparatively loosely attached to the underlying structures, as on the side of the neck or the breast."

"If the side of the neck is the proposed point of injection, then it is preferable to select the side of the neck over which the mane hangs, because in case a scar results as an after effect, it will be hidden."

ANTISEPTIC IS NECESSARY

"Previous to making such an injection, the site must be cleansed thoroughly with soap and water and rinsed off with some reliable antiseptic solution. A two per cent water solution of carbolic acid is effective. It is advisable to disinfect the instruments by placing them in boiling water or rinsing them in a strong antiseptic solution."

"Drugs injected into the blood stream must possess the same properties as those which are injected under the skin and the same antiseptic precautions must be taken."

PRODUCE RAPID ACTION

"The jugular vein is the one usually selected for making these injections. Drugs that are injected either under the skin or in the blood system, are quickly absorbed and produce rapid action."

"The most common method of administering drugs to animals is drenching. Previous to drenching the horse may be controlled by a piece of sash cord looped around the incisor teeth of the upper jaw with the other end of the rope over a rafter, in this manner elevating the head."

KEEP MEDICINE OUT OF LUNGS

"The drug should be in a liquid form in a long-necked bottle. The bottle is introduced into the side of the mouth so as to avoid contact with the teeth. The drug must be poured into the mouth very slowly and at the first symptoms that the medicine is not being properly swallowed, evidenced by coughing, the animal should at once be permitted to lower its head. If this is not done there is danger that the medicine will pass into the lungs and lung fever will result with possibly fatal termination."

Some horses refuse to swallow a drug, but this may be effectually overcome by carefully pouring into the nose a teaspoonful dose of clean, pure water. No other material should ever be used, warns Doctor Dykstra.

GUARD AGAINST CHOKING ANIMAL

Cattle may be held for the purpose of drenching by placing the thumb and forefinger of the hand, in the nostrils of the animal, elevating the head of the animal and then pouring the drug very carefully into its mouth. The same precautions re—

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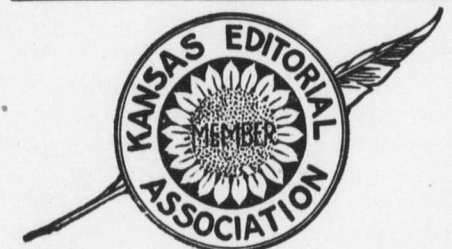
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WEDNESDAY, DECEMBER 20, 1916

LEADING IN EDUCATION

The United States continues to lead the world in educating its people, according to statistics collected by the federal bureau of education. Twenty-four per cent of the population is enrolled this year in educational institutions, while the countries having the next highest figures, Germany and Great Britain, show only 20 and 19 per cent respectively.

The country undoubtedly has a long way yet to go in making its educational system thoroughly meet the needs of the boys and girls who are being trained. The fact remains, however,—and it is a most important fact—that the country is educating a larger proportion of its citizens than is any other nation. That means incalculable stimulus to the ideals and the practice of democracy. In a nation with a popular form of government, it is more important that many citizens be fairly well educated than that a smaller proportion get an exceptional education. Moreover, the greater the number of educated persons, the greater will be the demand for improvement in education.

WHOSE VIEW IS RIGHT?

Some persons are inclined to smile at the statement that readers, rather than publishers, often object to higher journalistic standards. But here's a bit of concrete evidence. There probably is not a newspaper publisher in America who thinks that his employees are bound, by reason of their employment, to hold the same political views that he holds. Not so the readers, however. A gentleman writes to a New York paper much aggrieved because a western publisher permitted the business manager of his paper to speak in opposition to the paper's political policy. He intimates that the publisher himself couldn't have been perfectly sincere and loyal to his party.

The opinion of any newspaper man would be that the publisher simply was fair enough and tolerant enough to let his employees say what they pleased—and newspaper men in general regard fairness and toleration as real virtues.

Who holds the right view—the publisher or the complaining reader?

PUREBRED VS. SCRUB

Breeders who have made a test are aware of the advantages of purebred hogs over those that are of no breed (scrubs) or mixed breeds. This is where the services of the breeder come in as a help to the farmers and feeders who raise their hogs exclusively for pork. In other words, farmers make their profits in selling hogs for pork purposes.

The farmer who has had an opportunity and proved out the difference between the purebred hog and the scrub

is convinced of the superiority and profit in keeping the purebred hog. In consequence after an investigation and trial he is always anxious to buy better hogs for his brood sows and herd boars, and is willing because of the known benefits of purebreds to pay much larger prices than common hogs sell for, as they are then far cheaper than the lower price hogs.—American Swineherd.

WAITING FOR A CHANCE

Most people fail to attain the success they long for because they do not look through things; they rest in appearances, and are deluded and, so to speak, tricked by the outward show of things. It is a mistake to look for chances at a distance; for chances, like charity, begin at home. The young physician who means to become an authority does not waste the days when he is waiting for patients; he makes himself ready by the hardest kind of study. The young lawyer of ability, waiting for clients, does not fill his apprenticeship with impatient wishes for their coming; he qualifies himself for the time when he will be mercilessly tested by his opportunities. The romance of real success is the story of obscure years of faithful preparation for the chance which at last opens the door. Waiting for a chance does not mean sitting at home and letting the world go by; it means putting into the present hours the most faithful kind of preparation, and dealing with the task in hand as if it were the work on which all the future depends—as very likely it is.—The Outlook.

HEALTH THROUGH THE TEETH

Out of 330,179 school children examined in the city of New York in 1914, 194,207, or 58.8 per cent, suffered from defective teeth. This exceeded the sum total of all the other defects noted by nearly eighty thousand. Defective teeth impair general health and impede school progress. Disorders of the digestive tract, tuberculosis and various other diseases frequently are preceded by diseased conditions in the mouth. There is a direct relationship between dental development and mental development, and it is absolutely essential to good work in schools that children's teeth be maintained in a healthy condition.

The public health service recommends that a good tooth brush be included in the list of Christmas gifts for every American child, and that its use be made a part of the daily training. If this recommendation is carried out the United States will have more healthy children this year than last, and their chances of growing up into useful, healthy men and women will be increased.—Public Health Service Bulletin.

A TOWN THAT DIED

When the office of the secretary of state at Augusta had received the returns from all the 525 Maine towns and cities, except Hurricane Isle, in Knox county, it waited as long as its official dignity seemed to warrant and then gently prodded the delinquent town clerk. The answer was prompt: "As I am now the only voter here it did not seem worth while to hold an election."

Yet not long ago, as older people reckon the passing of time, Hurricane Isle was a town of some 800 persons and it had more than 200 voters to take part in its elections. As recently as the last census the population was 256 and its voters 89. The story of declining population is an unhappily familiar one along the Maine coast, but thus far Hurricane Isle is the only town to decline to the vanishing point. The reason may be summed up in one word—concrete. For Hurricane Isle in its days of prosperity was little more than a great granite quarry, standing well out in the waters of Penobscot bay, though not so far out into the open sea as Isle au Haut or Matinicus or Criehaven. From its great cliffs of granite well paid workmen took out the blocks that built the custom house in New York,

the postoffice in St. Louis, and great public and commercial buildings in many other cities. Then dawned the age of concrete. Now Hurricane Isle has more than 150 empty dwelling houses and only one or two that are inhabited.—Boston Herald.

CHRISTMAS

All over the Christian world fathers and mothers and children are wondering sadly whether they shall ever again be able to utter with a confident and happy heart the Christmas greeting—Merry Christmas! These words will be heard in many an American home this year, but even there they will be spoken, among the thinking elders of the family, with a sense that only for the very young can Christmas now be merry. In England, the land from

The Farmer's Christmas

Dr. Henry Jackson Waters

OVER fireside and throne, over shrine and mart, over trench and death-aisle, shines the Star and echoes the Song. To see the Star and to hear the Song are given only to him who in service to humanity realizes the ideals of the Master whom Song and Star announce. To feed the hungry, to clothe the naked, to proclaim glad tidings to those held captive by oppression, disease, or want—these are the ideals of human service for which Christmas stands. Such, at heart, have come to be the ideals of industry. Who but the producer has fed the hungry, clothed the naked, and exalted the ideals of peace and good will?

"To plow is to pray;
To plant is to prophesy;
To harvest is to fulfil."

And they that see the Star and hear the Song are they that serve mankind.

which our Christmas greeting came, those words will very likely not be heard at all. In France the phrase, "Joyeux Noel," if it is uttered, will be a conventional greeting, without spirit. As for Belgium and Poland and Serbia and Rumania, is it conceivable that any of the miserable people of those countries, where all alike are wretched, should not think of Christmas as the bitterest, most tragic day in all the year?

In our own country perhaps the most hopeful and heartening signs is the fact that for so few persons can Christmas be merry. Were we so sunk in selfishness, so content in our prosperity, so happy in our immunity, as to observe Christmas with a thankful and a merry heart, there would indeed be no health in us. The measure of our Christianity this year is to receive its supreme test. Is our self-denial growing more rigorous with the increasing destitution of the world? Out of our resources are we giving more to the afflicted and spending less upon ourselves than ever before?

Each one of us must make his own answer. Christmas this year should be the day when a man communes with his conscience.—Youths' Companion.

FIGURING THE FARM INCOME

Investigators in the field of farm economics have for a long time been trying to get some system out of the chaos of farm profits and have introduced several expressions which farmers should grasp. We refer to the terms "labor income," or "managerial income," and "capital income."

An example will explain their respective meanings. A farmer has \$20,000 invested in a plant—land, live stock, equipment and so on. At the end of the year he finds he has drawn cash, has cash on hand, increased product ready for market and so on to the extent of \$4,000 after paying all expenses. He may think he has made a profit of \$4,000. But has he? His \$20,000 invested is worth \$1,200 at interest without having more to do with it than making a safe loan. Here is the way

the farm economists would figure it—they would deduct \$1,200 from the \$4,000 as that which the capital and not the farmer through his own efforts, should be credited, leaving \$2,800.

This is the amount the farmer and those members of his family whose services have not been paid for and charged against the business have earned, and constitutes the labor income, although we prefer the term managerial income, for the good farmer is more a manager than a laborer. The other way to figure it is from the capital side. In other words the farmer takes enough out of the \$4,000 for wages for himself and those of his family not on the payroll. Suppose it is \$2,000. This leaves \$2,000, or 10 per cent earning on his \$20,000 investment. It means that the farmer earns

tute at Gardner, Johnson county, this week. The people of that region always have good institutes, and this cannot be an exception.

The election of student editors for the winter term was held on Wednesday morning after chapel exercises, and resulted in the choice of Messrs. B. H. Pugh and F. C. Sears and Miss May Seecrest.

The Kansas Dairy association will hold its fifth annual meeting on December 21 and January 1 at Clay Center. The college is represented in its list of members by the names of Professor Georgeson Secretary Graham, and Mrs. Kedzie.

F. A. Campbell, '90, writes from Highlands, Col., where he is building a home for his wife and boy, earning a fair salary, and making thorough preparation for entering the ministry of the Christian church, which he joined six months since.

Professors Failyer and Mayo make a raid upon the forests of Colorado during vacation, hoping to add materially to the wealth of the zoölogical collection of the museum. The Chicago, Rock Island, and Pacific railroad renders substantial aid to the enterprise.

THE NATIVITY

John Milton

No War, or Battails sound
Was heard the World around,
The idle spear and shield were high up hung;
The hookéd Chariot stood
Unstain'd with hostile blood,
The Trumpet spake not to the arméd throng,
And Kings sate still with awfull eye,
As if they surely knew their sovran Lord was by.

But peacefull was the night
Wherein the Prince of light
His reign of peace upon the earth began:

The Windes with wonder whist,
Smoothly the waters kist,

Whispering new joyes to the milde Ocean,
Who now hath quite forgot to rave
While Birds of Calm sit brooding on the charmed wave.

SUNFLOWERS

A man is also known by the company he parts with.

One half of the world doesn't give a whoop how the other half lives.

We wish you all a Merry Christmas, a Big Bonus, and a Happy New Year.

It is estimated that 57,000,000 guest towels will change hands this Christmas.

One of the best things about Billy Sunday is the way the brewers love him.

It's getting so now that a man has to spend as much for a dozen eggs as he does on a chicken.

We trust that none of our friends in Kansas City will try to sing the "egg refrain" at a "pop" concert.

"Fair and Warmer" hit Manhattan in company with a cold wave. You never can tell about those stage fairies.

Christmas, like a good many other good impulses, comes but once a year. That is what is the matter with most of us.

Wives should be particularly careful in picking out the berry forks which they wish to give their husbands for Christmas. There is nothing that enrages a man so much as to receive a set of berry forks that do not harmonize with the rest of his wife's silverware.

Yes, Virginia, there is a Santa Claus—two of 'em. One is a kind, whole-souled fellow, fostered by all good parents who believe in a Spirit of Good. The other is a smooth old duffer who works for the department stores and the hundreds of Scrooges, who also believe in the Spirit of Christmas—because it pays.

wages for himself and family and is enough of a financier to secure a 10 per cent dividend on his capital invested. To some farmers this may appear to be a lot of theory and useless waste of mental effort, but is it? Is it not just the line of thought and action that distinguishes the big factory from the blacksmith shop, the big merchant from the peddler? Just so it distinguishes the managing farmer from the common plodder.—Denver Field and Farm.

A QUARTER CENTURY AGO

Items from The Industrialist of December 19, 1891

D. C. McDowell, '91, is in the employ of the E. B. Purcell Mercantile company.

Secretary Graham has been kept home at intervals for a week past by la grippe.

Forman Baxter succumbs to an attack of influenza which confines him to his room.

Professor Walters has prepared the copy for a freehand drawing book for the use of first-year students. It will be introduced next term.

Cards are out for the marriage of R. U. Waldraven, '89, and Miss Maggie Campbell, second-year in 1890-'91, at Wall street, Linn county, December 31.

The following from the Logan Republican is news here: "D. W. Working, a former resident of Logan, and a brother of our Joe, has quit the newspaper business and is teaching school."

The total enrolment by classes for the present term is 491, as follows: post-graduates, 8; fourth-year class, 40; third-year class, 60; second-year class, 128; first-year class, 171; "B" division, 78.

President and Mrs. Fairchild will attend a reunion of the Midcontinental Association of Alumni and Former Students of Oberlin College at the Midland hotel in Kansas City Tuesday, December 29.

Professors White and Georgeson are in attendance upon a farmers' insti-

AMONG THE ALUMNI

H. W. Avery, '91, of Wakefield, visited the college Friday.

Dr. J. I. Kirkpatrick, '13, is engaged in veterinary practice at Sedgwick.

Mrs. Lorraine (Lewis) Jackson, daughter of Mr. and Mrs. J. M. Lewis, is recovering from her serious illness.

William P. Deitz, '16, is in charge of botany, manual training, and agriculture in the Sedgwick high school.

Forrest E. Gilmore, '16, has accepted a position with the Concrete Oil Storage company. He is in the designing office at Tulsa, Okla.

Miss Lucy Platt, '12, is holding a claim in Colorado, 60 miles south of Lamar. She recently returned from an eastern trip. She will spend part of the winter with her parents at Aetna.

James Dorman, chief of the western division of the United States department of agriculture, visited the college this week and called on relatives—Mrs. Emma Bowen, '67; Mrs. Phoebe (Haines) McKeen, '83; Mrs. J. E. Payne, '91; and Watson Haines.

DEATHS

KELTON EMMET LEWIS

Kelton Emmet Lewis, aged 23 years, died suddenly at his home in Kinsley Monday evening, December 11. He was the youngest child of Mr. and Mrs. J. M. Lewis, the latter of whom is a member of the state board of administration.

CLASS OF 1912 REUNION

The class of 1912, through its president, F. B. Nichols, is already making plans for a reunion at the June commencement, the fifth anniversary of the graduation of the class. The officers hope that every member of the class will make an effort to come.

COMMENDS ELLING AS FARMER

Otto H. Elling, '01, is the subject of a feature article in the Oklahoma Farmer-Stockman. The article discusses Mr. Elling's unusual success in farming in southwest Oklahoma, and quotes him at length on agricultural methods.

Part of the article follows:

"A farmer who has gained the reputation of being the best in his community, best because he makes the most money from his farming operations, must have some things in his experience that are of value to all other farmers who are working under the same conditions.

In southwest Oklahoma, Comanche county, such a farmer is Otto H. Elling. Elling works similar land, raises the same kinds of crops and faces the same weather conditions as other farmers in that part of the state. He has made good under conditions which many farmers look upon as hopeless. Some farmers have left that part of the state because of so-called crop failures. Elling has stayed and earned money.

"Elling's land is about as good, and as bad, as the average prairie land in that part of Oklahoma. It is a variable soil. His home farm is considered among the best farms; a 'school quarter' he cultivates is among the poorest land. Two other farms he rented recently are average land. So far as land is concerned he is on a par with other farmers in that part of Oklahoma.

"Elling is a graduate of the Kansas agricultural college. He worked for two years among some of the best herds of cattle in the United States, and for four years was foreman of the Fort Hays branch experiment station at Hays, Kan., before coming to Comanche county to farm.

"He has proved that the methods learned in this wide experience pay when put into practice. When Elling resigned as foreman of the Fort Hays substation he had a team, harness, household goods, and enough money to move to Oklahoma. In Oklahoma

he had a bare farm that he drew when the country opened.

"He borrowed \$500 and began. He farmed just 40 acres the first year. The \$500 was used to buy a cow or two, chickens, feed, to build some sheds, and to operate on the first year.

"It has been nine years now since he moved to Oklahoma. His farm is one of the best improved in that part of Oklahoma, with many improvements that make a farm convenient and comfortable. The work stock has been increased to 12 head; he has about 60 head of stock cattle, all of which are good grade shorthorns; in his granary are 2,500 bushels of oats, 500 bushels of wheat, and about the same amount of corn. Everything on the farm is paid for, there is a bank account in town of about \$2,000, and he owes no man."

IS KAW RIVER AMONG NAVIGABLE STREAMS?

H. B. Walker Makes Investigations, Result of Which May Determine Extension of Federal Aid

Whether the Kaw river should be considered as a navigable stream has been the subject of investigations carried on during the past week by H. B. Walker, state drainage engineer, and a member of the engineering committee of the Kansas Flood and Water congress, in conjunction with members of the United States army engineering corps.

"The work of these engineers is limited largely to those streams which are at present, or have at some time in the past been, navigable streams," said Mr. Walker. "It has not been definitely decided that the Kaw is a navigable stream. Upon this point may hinge the question as to whether Kansas is entitled to federal aid.

"It has been found that a steamboat, the Hartford, made a trip up the Kaw to some river point above Manhattan in 1855, leaving settlers at what are now known as Manhattan and St. Marys. Three of these persons are known to be living in Manhattan. A number of others also made their pioneer trip by boat up the river. Part of the present problem is to find out who these people are and to get written statements as to the facts of the trip.

"The annual flood loss in Kansas is upwards of \$4,000,000. The people of Kansas are intensely interested in some flood protection plan that will stop this enormous yearly loss. The problem of protection, however, has always appeared too complicated to be handled economically as a state undertaking.

"In July, 1915, Governor Capper called a state wide meeting at Topeka to devise some means of securing national aid in working out flood protection plans for Kansas. The outcome of this meeting was the organization of the Kansas Flood and Water congress. Through the efforts of this organization, and Kansas representatives at the national capital during the last session of congress, an appropriation was made for preliminary flood protection investigation by United States army engineers."

P. M. Churchill, assistant engineer of the war department, is now in Kansas making a reconnaissance survey of the Kaw watershed. The preliminary investigations now under way will also cover the Cottonwood and Neosho river watersheds.

TREAT FROZEN PLANT LIKE FROST-BITTEN EAR—AHEARN

Cold Water Is Remedy, Says Horticulturist—Other Methods Sometimes Necessary

When house plants are frozen they frequently may be revived by the use of cold water, points out M. F. Ahearn, professor of landscape gardening in the Kansas State Agricultural college.

"Care should be taken not to place the plant in the sun until it has thawed out well," said Professor Ahearn. "It should be treated as one would treat a frozen ear.

"Sometimes the plants can not be revived by this method. The foliage should then be cut away. New shoots will appear if the roots have not been frozen."

TO SELECT BEEF BULL

LOOK FIRST FOR INDIVIDUAL QUALITIES, ADVISES MANN

Choice of Breed Depends on Conditions Under Which Farmer Is Working and on Preferences Shown in Neighborhood—Older Animal Desirable

In selecting the beef bull, look first for the qualities of the individual himself, advises L. B. Mann, fellow in animal husbandry in the Kansas State Agricultural college. These qualities include scale, substance, strength, masculinity, character, general quality, ideal blocky beef conformation, and type representative of the breed.

"The breed to choose is not a question that can be answered offhand for the average stockman," said Mr. Mann. "It depends primarily on the general conditions under which the farmer is working, and secondly on the breed most popular in his locality. Choosing the already established breed in a locality permits of the exchange of bulls, and assists in cooperation in marketing, advertising, and improving conditions. The breeder's personal taste may be a small factor in the choice.

PURPOSE MUST BE CONSIDERED

"The special purpose for which the bull is intended, whether for the range or to head a purebred herd, is an important consideration. In choosing a range bull special stress must be laid on size, substance, and ruggedness. Some of the quality and fine points imperative in the bull to head a purebred herd may be sacrificed to meet these requirements.

"The pedigree is important, especially with the purebred herd bull, in respect to both blood lines and performance of the individual or his ancestors. With the range bull the blood lines are of somewhat less importance so long as the performance of the individual, or of his ancestors—if his own merits are untried—be satisfactory."

DEPENDS ON CIRCUMSTANCES

The age of the bull to select depends considerably on the length of time the buyer has been in the business and the reputation of his business, stated Mr. Mann. For the new breeder there is less risk and greater profit from buying an aged bull of tried merit than a young untried bull, provided the aged animal can be procured at a price that is not prohibitive.

It will take some years to determine the merits of the young bull's progeny and consequently the merits of the sire, whereas those of the progeny of the aged bull are recognized. Hence less speculation results and good bull calves from the aged sire may be saved to take his place when he is past usefulness.

PRICE ITEM WITH YOUNG MAN

"For the well established breeder," said Mr. Mann, "it may be more profitable to buy a young bull of good breeding and gradually try him out before dispensing with the older herd bull.

"Finally the price must be considered. The established breeder with a reputation can afford to pay a higher price for more popular blood than can the small breeder without reputation. The young breeder is unable as a rule to dispose of his stock at fancy prices until his reputation is established, so that he can not afford to pay so high a price for his bull. He should always purchase a good bull, but until the reputation of his business warrants it, the high priced bull is an expensive undertaking."

CONCERT IS TRIUMPH FOR MUSIC DEPARTMENT

Presentation of Handel's "Messiah" Produces Great Enthusiasm—Other Events Planned for the Year

Enthusiasm was manifest on all sides as the audience of 2,500 persons was filing out of the college auditorium Sunday afternoon at the close of the presentation of Handel's "Messiah" by the Kansas State Agricultural College Choral society augmented by choruses from Clay Center and Randolph, and assisted by the college orchestra. Standing room only was available when the oratorio started, and several hundred persons were turned away.

This second annual Christmas concert demonstrated the fact that the agricultural college is becoming a musical center. It was not necessary to bring in an orchestra of national reputation, or a quartet of soloists. The talent is here. The college provided the orchestra and three of the four soloists. It was a triumph for the department of music, and its head, Arthur E. Wesbrook.

Just a beginning has been made in the planned work of the department of music. Announcement was made Sunday of a festival of music and drama to be held March 12 to 18 under the auspices of the departments of music and public speaking. One of the six events of the series will be a recital by Cecil Fanning, America's greatest concert baritone. Other important musical features will be held in the following school year.

The work of Professor Wesbrook as director of the chorus of nearly 300 stood out preëminently in the Sunday concert. "For Unto Us a Child Is Born," although one of the most difficult parts of the great oratorio, was sung in a manner which showed perfect control and careful training. The famous "Hallelujah Chorus" was impressive.

The clear bell-like voice of Miss Faye Richards, soprano, was heard to the best advantage in her rendition of "I Know That My Redeemer Liveth." The singing of Miss Richards, who appeared before the general public for the first time in Manhattan, was one of the pleasing features of the oratorio. Elton Calkins, tenor, a new member of the faculty of the department of music, showed excellent voice control. He sang with finish "Ev'ry Valley Shall Be Exalted." Miss May Carley, contralto, sang "He Was Despised" with wonderful devotional feeling. Thomas A. Remington of Chicago, baritone, handled the long Handelian runs in "Why Do the Nations?" with ease. His singing was exceedingly well received.

The work of the college orchestra under the direction of R. H. Brown, concert master, was deserving of special praise. The difficult music was handled in professional style. Miss Patricia Abernethy, pianist, exhibited much technical ability. Her work required skill and judgment.

CEREALS RANK NEXT TO MILK AS KANSAS FOOD NECESSITY

Must Be Cooked Thoroughly to be Digestible, Says Home Economics Specialist

Cereals are more indispensable than any other regular food served in Kansas homes with the exception of milk, because they contain food elements in large amounts and are easily digested if thoroughly cooked, asserts Miss Mary Baird, specialist in home economics in the Kansas State Agricultural college.

"Corn, oats, rice, wheat, rye, and barley are the grains from which cereals are made," said Miss Baird. "Wheat and oats furnish nutriment in better proportions than corn, although all are valuable. Grain contains unusually good proportions of the necessary food ingredients with a small per cent of refuse. They are readily prepared for the table and are palatable.

"There are many commercial brands of cereals on the market put out by various breakfast food companies, but often a richer grade of grain products may be purchased at flour mills for much less money.

"Cereals must be cooked thoroughly to be digestible. The ideal way of cooking is in the fireless cooker, while the next best method is in the double boiler. From two to five hours should be allowed for cooking and for this reason cereals for breakfast should be cooked the day or night previous. Cereals that have to be cooked are far superior from the standpoint of economy and palatability than the predigested and prepared grains."

FOR PUTTING OUT FIRE

CHEMICAL EXTINGUISHER IS WORTH WHILE, SAYS PROFESSOR KING

Apparatus Is Inexpensive and May Prevent Heavy Loss of Property on Farm—Is Used Extensively Also in Public Buildings and Railway Trains

Loss of property on the farm often can be prevented by the use of chemical fire extinguishers, according to H. H. King, associate professor of chemistry in the Kansas State Agricultural college.

"The way in which the chemical fire extinguishers work is by forcing a stream of gas or of an incombustible liquid which quickly volatilizes over the flames," said Professor King. "This gas, which is heavier than air, acts as a blanket and smoothers the flames by shutting off the oxygen supply. Some extinguishers generate a gas which forces a stream of water from a container upon the flames."

VARY IN LASTING QUALITIES

Hand fire extinguishers can be bought for from \$5 to \$20. They are light enough to be carried from one room to another or to outside buildings, and are easily operated at a safe distance from the fire.

After use of the apparatus recharging is often necessary. This can be done at a comparatively low cost. If not used, however, some extinguishers will be just as available at the end of 20 years as when new. Others are not so durable and need to be recharged oftener.

MANY IN COLLEGE BUILDINGS

There are at least 50 chemical fire extinguishers now installed in the various buildings in the agricultural college. One make, especially fitted for putting out oil and gas fires, is considered of great value in the chemistry department, where explosives and inflammable material are handled daily.

The wide use of kerosene stoves and lamps, gasoline engines, and automobiles on the farm increases the need of such fire extinguishers. The stream of gas can be directed into a blazing tank of oil and the fire put out. In no such case should water be used, as it does not mix with the oil and only spreads the flame. Instead, sand or some other means of smothering the flames should be employed.

GET ADVICE BEFORE PURCHASE

Burning clothing can be extinguished without harm to the person, if the apparatus is properly handled. It is claimed that neither the finest fabric nor the brightest material is injured by the chemicals.

Directions for operating and recharging the contrivance are furnished with each one. It is advisable to consult some authority on the subject before purchasing a fire extinguisher.

Besides the protection of fire insurance, fire escapes, city and often individual fire departments, almost all public buildings are supplied with chemical fire extinguishers. Railway companies make special use of them.

COW TESTING ASSOCIATION IN MULVANE NEIGHBORHOOD

Another Is Planned for Region Between Wichita and Newton

At a recent field meeting of the Kansas State Dairy association at Mulvane, steps were taken to organize a cow testing association for that section of the state. O. E. Reed, professor of dairy husbandry in the agricultural college, showed the benefits of such an association and urged that one be formed.

The interest in testing associations is spreading. F. P. Lane, county agent in Harvey county, reports that representatives from Mulvane, Wichita, and Newton met to see what progress had been made in securing members for an association. It was found that enough members had already been secured in the vicinity of Mulvane to start an organization. It is planned to secure enough members along the interurban in the Wichita and Newton territory to form another association.

GOOD IMPLEMENT SHED IS SIMPLE BUT WELL PLANNED

FRAME STRUCTURE, INEXPENSIVE BUT PROPERLY CONSTRUCTED,
SERVES MOST PURPOSES—MACHINERY SHOULD BE AR-
RANGED SO AS TO BE ACCESSIBLE

A fair indication of the thrift and general prosperity of a farmer is the method he employs in caring for his tools, according to Dr. J. D. Walters, professor of architecture in the Kansas State Agricultural college.

"Shiftlessness, waste, lack of energy, constant buying, and heavy burdens of debt will accompany poor care," said Doctor Walters. "Good care is an indication of shrewdness, business ability, long lived machinery, comfortable bank balances, and assurances of a peaceful, prosperous future."

PLANNING FOR THE BUILDING

"The machine shed is seldom used for any other purpose than to shelter machinery and the cheapest structure that is consistent with reasonable durability is the one to construct. A wooden building will answer most requirements."

"Plans for the implement shed will be governed by the number and size of the machines and the amount of space that each will occupy. The arrangement of the machines should be such that they will be easily accessible in seasons when they are needed most. The binders should be given a place in a far corner, leaving a space near the door for the mower and the plows. The manure spreader, the wagons, and the buggies should be accessible."

ECONOMIZE SPACE WITHIN

"Many opportunities for economy in space can easily be found. A binder platform, for instance, may be raised up, provided some of the rail slats with the attached arms are removed, and in this space beneath the platform can be stored such implements as hand drills and walking plows."

"The construction of a machine shed is simple. Since the building is not subjected to any heavy load, the framing may be just sufficiently strong to hold the wall and roof covering, and to prevent collapse from wind or snow and ice loads. The studs or posts may be two by fours or four by fours, no heavier stock being necessary."

MOST HAVE ONE STORY

"A two story machine shed will, of course, require heavier and more substantial framing, but a two story shed is comparatively rare. A floor may or may not be needed. If built at all, it should be constructed of cement concrete."

"The roof may be of almost any style, from the simple single pitch shed roof to the ordinary gable roof, but in any case, the pitch should not be less than 20 degrees."

FOUNDATION IS SIMPLE

"The foundation of the one story machine shed will naturally be simple, since the only load which it has to support is the superstructure itself. The footing should be 12 inches wide at the bottom and extend a foot or 15 inches into solid soil. The foundation wall should be brought up some distance above the ground so as to give further protection against rotting the timbers."

"Wide doors are an absolute necessity. A 12 foot sliding door is large enough for the majority of farm implements, even allowing the binder and the rake to enter. To keep the structure from sagging at the doorway a strong lintel should be placed at this point."

SUBSTANTIAL DOORS ARE NEEDED

"The doors themselves should be solidly and substantially built. In the average machine shed, one 12 or 14 foot door is sufficient to meet all requirements, but a smaller door should also be provided. Sliding doors of good construction are to be recommended in preference to hinged doors, as a large door is sure to pull out the hinges or to sag badly."

"The wall covering may consist of vertical stock boards 1 or 12 inches

wide, with the joints covered with battens. Occasionally the shed is boxed horizontally, but this method is not nearly so satisfactory, as a large number of studs are necessary. Any ordinary weatherboarding may be used for this purpose, but it is advisable to use a material sufficiently strong to carry some of the load."

PAINT INCREASES DURABILITY

"The durability of a wooden shed may be increased almost indefinitely by painting. Buildings of prosperous farmers are always kept well painted, not only to preserve the wood, but to improve the appearance."

"On new wood, two coats are usually sufficient. The first coat should contain mainly oil, with a small amount of white lead, so that it will fill every pore; the second coat should be heavier, containing less oil and more pigment. To keep the shed in good condition, it should receive a single coat of paint every two to four years."

OPEN TYPE SOMETIMES SUITABLE

"Under some conditions the open shed type of building may be more suitable. This is true where wagons, racks, and spreaders are stored. The framing of the building should be of the simplest possible kind. Any ordinary posts, four by four inches in diameter, set on concrete piers at about eight feet on centers will be a satisfactory support for the roof load."

"Experience has shown that a building either 18 or 26 feet wide is well adapted to accommodate the various farm machines. The height of the walls should be not less than 10 feet, with a gable roof from four to six feet high, but a span of 26 feet is almost too great for adequate support of the roof without adding collars of one by six or two by four inch material."

"Keeping wagons in the driveway of cribs and leaving the spreader at the end of an alleyway of a barn for convenience in loading, are cases where it is desirable to use other buildings for the purpose of storing farm implements. In general, however, other buildings are more expensive than a machine shed."

TO RESCUE FARM LIFE

(Concluded from Page One)

ing the national roads or the banks is not the way to secure a new agriculture. You should be constructive, not destructive. You should insist upon another plate at the banquet, a plate for agriculture."

"American agriculture needs a new spirit, a more daring spirit—a spirit that will ask questions, that will overthrow traditions. Other modern industries have been to school. They have learned lessons—chief among which is coöperation. American agriculture has not learned that lesson. If you will, you may go out among the farmers teaching and preaching the doctrine of coöperation."

MUST COÖPERATE WITH OTHERS

"But there is even heavier work than the work of interesting the group of farmers. We need men and women who are able to secure the help of other groups of the whole people."

"When evil days come upon the transportation industry, they take counsel among themselves, but they do more than that. They appeal to the other groups; they call upon the farmers, the manufacturers, and the merchants for assistance. They secure an increase in their charges. When manufacturing languishes, the manufacturers takes counsel among themselves but they do more than that. They appeal to the other groups, to the whole people, and the protective tariff is changed to meet their requirements."

"American agriculture has not yet learned to call upon the other groups, and we need men and women who are able to interest the whole people in

the cause of agriculture. I hope this class may furnish its full share of such men and women."

OTHER CALLINGS ARE CROWDED

"The legal profession is overcrowded. The medical profession is overcrowded. There are too many clerks, too many merchants, and too many real estate men."

"My suggestion is that you become advocates of American agriculture. The prospect is tempting. If you do not want to plant corn, you may plant greater crops—you may plant ideas. Let me repeat, you may plant ideas. Now is the time. The European war is breaking the current of human life. Adjustments are being made in human society. Reorganization is the order of the day and let us all pray that when the new order blossoms forth, agriculture may appear, invigorated with a new and happier life, with strength invincible to maintain and to promote for us and for all mankind a Christian civilization."

Degrees were conferred as follows:

Bachelor of science in home economics—Margaret Isla Bruce, Marquette; Grace Lydia Curry, Manhattan; Mary Rebecca Dunlap, Eureka; Nelle Flinn, Admire; Ruth Esther Frush, Kansas City, Kan.; Elizabeth Emma Gish, Manhattan; Gladys Gist, Manhattan; Bertha Belle Hole, Manhattan; Ruth Amelia Hutchings, Manhattan; Agnes McCord Irwin, Manhattan; Pearl La-Claire Jacques, Hamlin; Nelle Florence Longenecker, Kansas City, Kan.; Reah Jeannette Lunch, Clayton, Mo.; Marie Moses, Manhattan; Hazel Berdella Peck, Manhattan; Olivia Esther Peugh, Hutchinson; Juanita Reynolds, Canton; Florence Hazel Smith, Great Bend; Mildred Tolles, Lawrence; Elizabeth Blanche Walsh, Kansas City, Kan.

Bachelor of science in agriculture—Bernard Martin Anderson, Manhattan; George Murray Arnold, Piedmont; Henry B. Bayer, Quincy; Ary Clay Berry, Topeka; Robert Elliott Curtis, Manhattan; William Deitz, Kansas City, Mo.; George Ernest Denman, Manhattan; Frank Harold Dillenback, Walnut; Irl Ferris Fleming, Manhattan; Claude Fletcher, Hiawatha; Elmer Herman Jantz, Larned; Donald Smith Jordan, Topeka; Robert R. Lancaster, Nevada, Mo.; Marc Atchison Lindsay, Kansas City, Kan.; Lewis Augustine Maury, San Antonio, Tex.; Raymond Smith Orr, Manhattan; Grosvenor Ward Putnam, Manhattan; Paul Robinson, Eskridge; William Herbert Robinson, Holton; Byron John Taylor, Chapman; Robert Emmet Terrill, Guthrie, Okla.; Sidney Rendall Vandenberg, Manhattan; Glenn Frederick Wallace, Siloam Springs, Ark.; Walter Harris Washington, Manhattan; Price Harlan Wheeler, Garden City; Raymond Hazzleton Whitnack, Manhattan.

Doctor of veterinary medicine—Richard Clay Chatman, Manhattan.

Bachelor of science in industrial journalism—Hagdasar Krekor Baghdigian, Topeka; Albert Ellis Hylton, Manhattan; Annette Woodward Perry, Manhattan.

Bachelor of science—Charlotte Morton, Ellsworth; Harry Fred Vaupel, New Cambria; Lyndell Porter Whitehead, Walnut.

Bachelor of science in architecture—Stanley Bushnell Baker, Manhattan; Henry Robert Horak, Munden; Frederick Albert Korsmeier, Manhattan; Robert Edward Sellers, Emporia.

Bachelor of science in civil engineering—Charlie William Hickok, New Ullyses.

Bachelor of science in electrical engineering—Andrew Jack Herold, Seneca.

THREE GRADUATES ELECTED TO PHI KAPPA PHI SOCIETY

Two Women and One Man Honored by
Scholarship Organization

Miss Juanita Reynolds, Miss Florence Hazel Smith, and Glenn Frederick Wallace were elected to Phi Kappa Phi, honorary scholarship society, from the class graduated this morning. These three students had the highest rank in their studies throughout the college course.

GET AND KEEP WATER

SORGHUMS OBTAIN MORE MOISTURE,
LOSE LESS THAN OTHER PLANTS

That Is Reason for Their Drouth Resistant Qualities, Believes Dr. Edwin C. Miller—Has Carried Out Tests in Comparison with Corn

Kafir and milo will withstand drouth better than corn because they have a greater number of fibrous roots and a smaller leaf surface, in the belief of Dr. Edwin C. Miller, assistant professor of botany in the Kansas State Agricultural college, who has been studying the drouth resistance of kafir, milo, and corn at Garden City for the last three years.

"Not only are kafir and milo better fitted to absorb moisture from the soil on account of their root systems, which have twice as many fibrous roots for each plant, but their leaf and sheath areas are only one-half as great as those of corn, and in consequence lose much less water by evaporation," said Doctor Miller.

HOW SOIL WAS CULTIVATED

The soil on which the experiments were performed was a sandy loam of nearly even texture to a depth of 10 feet. The land was plowed in the fall six inches deep and then irrigated with eight or 10 inches of water or until the soil was saturated to a depth of three or four feet. The soil was not worked again until spring, when it was given several shallow cultivations, harrowed, and leveled with a float before planting.

Kafir, milo, and corn were then planted in alternate rows in order that they might be under the same conditions. The plants were kept free from suckers during the growing season. Weeds were scraped off as often as they appeared, but no other cultivation was given. No water was artificially supplied except the fall irrigation.

ROOT SYSTEMS EXAMINED

Sections of the root systems of the representative plants were obtained when the plants had finished their growth. Trenches were dug six feet deep around two plants of a kind as they stood in a row so that a prism of soil 12 feet long by 18 inches wide was left standing containing the main stalk, and lateral roots in two directions. A wooden framework was built around this, which was later covered with woven wire of a four by six inch mesh. Holes were then punched through the prism of soil about every 12 inches each way. Into these were pushed cross wires to support the roots when the soil should be washed away. The stubs of stalk from which the aerial parts had been cut were wired in place.

The soil was then gently washed out, leaving the roots held in place by the cross wires.

It was found that the primary roots of each of the plants extended six feet into the soil, also that each plant had a spread of three feet laterally but that the milo and kafir had 25 to 30 secondary roots to each inch of primary root, while the corn had 12 to 15 secondary roots to the inch.

REQUIRED EXTENSIVE LABOR

The amount of work required for this experiment will be realized when it is known that it was duplicated several times, 33 root systems having been investigated in all.

The weights of the root systems were determined by planting kafir, milo, and corn in large galvanized tanks sunk flush with the ground. When the plants had finished growth, the stalks were cut off and the entire contents of each of the tanks washed through a sixteenth inch sieve in such a manner that all of the soil was disposed of and the roots retained. The roots were then dried at 105 degrees centigrade and weighed.

SORGHUMS HAVE MANY ROOTS

The results of the experiments in regard to soil moisture content and depth of root penetration show that under the conditions of this experiment very little, if any, depletion of the soil took place below the depth of root penetration.

In comparing the plants of dwarf milo, blackhulled kafir, and pride of Saline corn at all stages of their growth the two sorghums had a primary root system that was just as extensive as that of the corn plant. In addition the milo or kafir had twice as many secondary roots as the corn at any stage of its growth.

"It is apparent," commented Doctor Miller, "that the dwarf milo or the blackhulled kafir plants would have the advantage over the corn plant under any climatic condition that would tend to bring about a loss of water by evaporation from these plants."

COSTUMES TO BE SHOWN IN FARM AND HOME WEEK

Domestic Art Classes to Make Exhibit of
Wool Dresses and Evening
Gowns

Among the exhibits that will be on display Farm and Home week at the Kansas State Agricultural college, are a number of costumes made this term by the classes in advanced and wool dressmaking.

"We are proud of the work that has been accomplished by these classes this term," said Mrs. Bessie Webb Bird-sall, professor of domestic art in the college. "In the designing and selection of material, the girls have shown individuality and close application to principles learned in costume and design, color and design, and all subjects that come in the course previous to this advanced work."

"The classes in advanced dressmaking are completing evening gowns which are real creations in silk, chiffon, crepe de chine, and silk net. The students drafted their own patterns and designed the dresses. The individuality in choosing the style best adapted to each person, as well as appropriate materials and colors, shows personality and taste. Embroidery designs in beading, chenille, and silk floss are worked on the gowns in pretty and original designs. Wool dressmaking will display afternoon and street costumes. These show originality in design."

"The average cost of the evening dresses, not including time spent in making, is from \$15 to \$18. They could not be purchased at a shop for less than \$30 or \$35. The afternoon and street dresses cost the girls from \$12 to \$15 and the same garment would retail for \$25 to \$30."

TO DOCTOR FARM ANIMAL

(Concluded from Page One)

garding possible choking should be used with cows with horses. As a rule cattle swallow drugs much more readily than horses.

In drenching sheep, the greatest precautions must be observed to prevent choking. The animal may stand on all fours or sit on its haunches, during the process. The head never must be elevated excessively high. A general rule is not to elevate the nose any higher than the eyes in any case.

The drug is poured into the mouth very slowly and only in small quantities at a time. The head should be depressed frequently so as to avoid all possible danger of passing medicine into the lungs.

SWINE HARDER TO TREAT

Swine may be drenched in the same manner as sheep but with more difficulty, and medicine is preferably administered with the feed, according to Doctor Dykstra. This is a good way with all kinds of animals, but it has the serious objection that when the animal needs medicine it frequently refuses to eat all food. This is more often the case when the food contains medicine.

Small doses of fluid medicine, not to exceed two ounces in amount, can be administered to a horse by injecting it into the mouth of the animal, with a metal dose syringe, while the head is elevated.

The chief precaution to observe in administering drugs through the mouth is to avoid letting any medicine get into the lungs.

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Number 14

NO AGE LIMIT FOR MAN

VALUE OF PERSON ENDS ONLY WHEN HE STOPS THINKING

President A. Ross Hill Urges Development of Investigation in Address on College Vocational Education—Science and Application Go Together

"A man who at the age of 65 years is still thinking for himself is worth more than ever, while the man who at the same age has ceased making new ideas for himself is worse than useless," said Dr. A. Ross Hill, president of the University of Missouri, who delivered the opening address of the winter term of the Kansas State Agricultural college.

Doctor Hill gave a scholarly and pointed discussion of the subject, "Vocational Education of College Grade." Insisting that all education of college grade was essentially vocational, he traced the history of higher education and showed its vocational character at all periods.

EARLIEST UNIVERSITIES VOCATIONAL

The oldest European university, that of Salerno, was established, he pointed out, for the study of medicine, the University of Bologna, the most ancient educational institution still in existence, was founded to teach law, while the universities of Paris and Oxford were instituted to present theology and scholastic philosophy. Early American colleges were founded, the speaker stated, to train men for the ministry in the new country.

Vocational education of college grade, President Hill declared, must be scientific, investigative, and humanitarian.

Doctor Hill emphasized the fact that the scientific training must be accompanied by practical application if it is to bring the desired results. Students must be trained, he said, to think concretely.

The value of investigative work was clearly pointed out by the speaker, who showed that the learning process was necessarily a process of investigation.

EVERY TEACHER AN INVESTIGATOR

"It has been urged by some," said Doctor Hill, "that too much attention is given in American colleges to research, that we need more good teachers and fewer investigators. But the person not engaged in investigation is not thinking. It is true that there has been a great deal of pedantic investigation, but that should not discredit the work of the investigator who makes real ideas for himself and then stimulates his students to make real ideas for themselves. I look forward to a time, not when there will be fewer investigators in educational institutions, but when every teacher will be an investigator."

Doctor Hill urged a culture based on humanitarian ideals. Vocational education had tended, he said, to be individualistic. Its development along socialized lines, he pointed out, would promote a culture fully as valuable as that produced by any other means.

WOULD GIVE CHANCE TO DO REAL HOUSEKEEPING

Miss Margaret Haggart Favors Practice House for Educational Purposes—What Other Colleges Do

A practice house in which girls may do real housekeeping is much needed at the Kansas State Agricultural college, in the opinion of Miss Margaret Haggart, professor of domestic science.

"Practice houses are used for purely educational purposes and not for living," said Miss Haggart, who recently spent several weeks investigating institutional work in colleges, universities, and hospitals. "Several

of the best colleges have cottages where a group of girls spend from four days to two weeks under the supervision of a teacher doing the real work of a home. Among the valuable lessons that may be learned by this method are those that pertain to standards of living and to standards of foods."

The universities visited were Wisconsin, Cincinnati, Toronto, Cornell, and Columbia. The agricultural colleges were those of Michigan and Ontario. Miss Haggart also visited Johns Hopkins hospital, and the Chicago Presbyterian hospital, each of which has 800 beds, and the municipal hospitals of Cook county, Illinois, and of Cincinnati. In several of these institutions former students from the home economics division of the Kansas State Agricultural college are employed as dietitians or housekeepers.

One of the most beautiful and complete residence halls connected with the institutions visited was the Prudence Risely hall at Cornell university. This hall was presented to the state for the use of women students by Mrs. Russell Sage.

The dining hall of the University of Michigan is run as a club. The food costs are low.

At the Ontario Agricultural college the dining hall furnished meals during the year 1915 for 13.6 cents per capita. This price included supervision, service, heat, light, repairs and the cost of the food, which was 9.14 cents per capita. At this rate a little less than 50 per cent was added to the food cost by the overhead expense. Miss Watson, head of the home economics department, manages the hall.

FAR-OFF SWITZERLAND ASKS WALKER'S ADVICE

Engineer Receives Inquiry from Europe on Drainage Matter—Questions from Other Continents Also

A much censored letter was received this week by H. B. Walker, associate professor of irrigation and drainage engineering, from L. C. Bryan of Villa Miguel, Switzerland, relative to the possibilities of draining a large Swiss swamp.

The letter bore evidence of having been opened several times. It had been resealed with large stickers and bore the word "censored" in large red letters. The letter in part follows:

"I am interested in reclaiming a tract of bog land that is covered with water three months of the year in ordinary times. It has been raining almost incessantly since the war began three years ago. In ordinary times there is little or no water here, however, for nine months in the year.

"Will you advise me as to the best methods to follow? We could erect windmills to do the pumping, or we could use electricity, for it is very cheap here. The land has a general slope of about 80 centimeters to the kilometer. It is entirely surrounded by the embankments of the country highways.

"It takes about three years to bring a piece of land of this kind under cultivation.

"All of the Rhone valley is to be drained under the supervision of the state engineers within the next two or three years, but this bit is a corker to them.

"I would like to show the Swiss that we Americans can do things. If you are interested, will you kindly advise me as to what the possibilities are in a case of this kind?"

"This is the first letter that we have received from that part of the world," said Mr. Walker, "but we have received inquiries on like matters from Canada, Australia, Russia, China, and India."

TO CURE MEAT ON FARM

FOLLOWING SIMPLER RULES WILL GIVE FIRST CLASS RESULTS

Animal Husbandry Specialist Tells of Effective Methods of Keeping Pork and Beef—Smoke House May Be Built at Small Cost

Good results may be obtained in curing meat on the farm if a few simple rules are observed, points out A. M. Paterson, instructor in animal husbandry in the agricultural college.

"To insure the best results the carcass should cool from 24 to 28 hours," said Mr. Paterson. "If the meat is salted before the animal heat is all out of the carcass, it is likely to have a strong odor. If it is allowed to freeze, the cure will not penetrate evenly, and the meat may spoil. Meat should be cured while it is still fresh—it will have a better flavor.

"A clean hardwood barrel makes a good vessel in which to cure the meat. Care should be taken to have the barrel clean and free from any material which may cause the meat to spoil. A stone jar also makes a suitable vessel, but due to the cost and danger from breakage, the barrel is preferable.

BRINE CURE COMMONLY USED

"There are two methods of curing pork—dry and brine cure. Under ordinary conditions brine cured meats have proved the better for farm purposes as a suitable place for dry curing is not always obtainable. A moist, cool cellar is the best place to cure meat, and if kept dark, will aid in keeping away flies.

"In applying the brine cure, rub each piece of meat with common salt and let stand over night. Pack the meat in a barrel, with hams and shoulders at the bottom and bacon strips on top. With each 100 pounds of meat, use eight pounds of salt, two pounds of brown sugar, and two ounces of saltpeter. Dissolve these ingredients in four gallons of pure, clean water, pour the mixture over the meat and weight it down.

HOW TO DRY CURE

"When dry curing pork, rub each piece with salt and let it stand over night. With each 100 pounds of meat, use five pounds of salt, two pounds of sugar, and two ounces of saltpeter. Rub the pork once every three days with one-third of the mixture. After 10 to 14 days, the meat will be ready for smoking. This recipe should not be used where the meat is kept in a warm, dry place, as the preservatives will not penetrate evenly.

"In preparing pork for the plain salt cure, rub each piece of meat with salt and pack it in a barrel. Use with each 100 pounds of meat, 10 pounds of salt and two ounces of saltpeter. Dissolve these ingredients in four gallons of water, cover the meat and weight it down. Leave it in the brine until used."

To insure pork of high quality and to improve its keeping qualities, the meat should be smoked, according to Mr. Paterson.

A smoke house can be built at small cost, points out Mr. Paterson. It should be well ventilated and high enough so that the meat will be 10 feet from the fire. The other dimensions of the smoke house will depend upon the amount of meat to be smoked.

HICKORY WOOD IS BEST

Care should be taken in putting the meat in the smoke house that the pieces do not touch each other.

Hickory makes the best wood for smoking meat. Maple is next, while cobs are good. Never use a soft wood, as the meat will then have a resinous taste. It is a good plan to warm the meat slightly before smoking it. The length of time for smoking depends on the individual taste. After the meat has been smoked, it should be wrapped in sacks or paper and hung in a dry, airy place. A grain bin is an excellent place to keep meat.

The cheap cuts of beef, such as plate, brisket, and flank, are used generally in corned beef. The animal heat should be out of the carcass before curing, and it should not freeze. Beef should be cured while it is fresh as it is more easily kept and more palatable.

PROCESS OF CORNING BEEF

To corn beef use eight pounds of salt with 100 pounds of meat. Put a

STOCK PRIZES TOTAL 112

STEERS EXHIBITED BY COLLEGE TAKE RIBBONS AND CASH

Animal Husbandry Department Makes Brilliant Year's Record at Leading American Shows—Every Individual Entered Placed Among Winners

One hundred twelve ribbons and \$2,877 in cash represent the prize winnings of the show steers of the Kansas State Agricultural college for the year 1916. As has been customary, the two-year-old steers were sold at the International show and the senior yearlings at Denver, the sales receipts being \$2,854.63. The total cash income was therefore \$5,731.63.

It is for the purpose of teaching the judging of fat steers that the animal husbandry department every year fits a herd of purebred steers each of Aber-



MERRY DALE, TWO-YEAR-OLD SHORTHORN, BRED AND SHOWN BY THE KANSAS STATE AGRICULTURAL COLLEGE

deen Angus, Galloway, Hereford, and shorthorn breeds, and also a herd of grade Hereford steers. All the purebred steers except the Galloways are bred on the college farm. The grade Herefords are bred at the Fort Hays Branch Experiment station.

layer of salt one-fourth inch thick in the bottom of the curing vessel. Pack in layers of meat as closely as possible, alternating salt with meat and covering the top layer completely with salt. Let it stand over night. With each 100 pounds of meat use four pounds of sugar, two ounces of baking soda, and four ounces of saltpeter. To these ingredients add a gallon of clean fresh water. If the weather is warm, the brine should be boiled and allowed to cool before being poured over the meat. Add enough water to cover the meat. Weight the meat down to keep it under the brine. The meat may be left in the brine until used.

When preparing dried beef, the round cut is the better cut to use, believes Mr. Paterson. With 100 pounds of meat use five pounds of salt, three pounds of sugar, and two ounces of saltpeter. Rub the surface of the meat with one-third of the mixture, let it stand in the curing vessel three days, and then rub it with one-third of the remaining mixture and let the meat stand for three days longer. Rub on the remaining mixture at the end of the three days and let the meat stand the same period.

In repacking put the bottom pieces on top, remove them from the brine, and smoke them. Hang them in a dry, well ventilated place where the water will evaporate from the meat. Meat may be used as soon as it is smoked. The drier the climate, the more easily meat may be dried.

BANKER FURNISHES MONEY TO BOYS FOR PURCHASING PIGS

Big Club Is Planned in Vicinity of Jewell City

Arrangements for one of the largest pig clubs in the state are being made in the four townships surrounding Jewell City by the treasurer of the farm bureau, W. A. Matson, a banker in Jewell City.

Mr. Matson plans to furnish 40 boys with money to buy one hog each. The club will be conducted in close cooperation with the farm bureau and county agent.

WHERE COMPETITION IS KEENEST

In 1916 these steers were exhibited at the National Western Stock show at Denver, the fairs at Hutchinson and Topeka, the American Royal show at Kansas City, and the International show at Chicago. As these shows include the largest and best live stock exhibits in the United States, with the keenest of competition, the winnings of the college represent a particularly high achievement.

The 22 steers shown won nine championships, eight reserve championships, and 42 first, 22 second, 16 third, 12 fourth, and three fifth prizes.

SHORTHORNS BIGGEST SUCCESS

The greatest success was attained with the Shorthorn herd. Merry Dale produced a total income of \$671.80 from prizes won in 1916 and his sale value, Barmpton Dale \$516.18, and King Dale \$480.66.

King Dale was the first prize and champion shorthorn steer at Denver, third at the Royal, and second at the International. Merry Dale, not shown at Denver, was champion steer, all breeds and ages competing, at Topeka and Hutchinson, first prize and champion shorthorn steer at the Royal and at the International, also reserve champion two-year-old steer at the International. Barmpton Dale was first prize calf and reserve champion shorthorn at Denver, fourth prize steer, all breeds competing, at Topeka and at Hutchinson, first prize and reserve champion shorthorn at the Royal and at the International, and reserve champion yearling at the International.

GALLOWAYS TAKE 'EM ALL

The Galloway herd won every first prize and championship offered for

(Concluded on Page Four)

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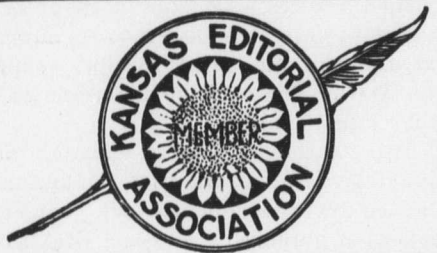
H. J. WATERS, PRESIDENT.....Editor-in-Chief
N. A. CRAWFORD.....Managing Editor
J. D. WALTERS.....Local Editor
ADA RICE, '95, M. S. '12.....Alumni Editor

Except for contributions from officers of the college and members of the faculty, the articles in THE KANSAS INDUSTRIALIST are written by students in the department of industrial journalism. The mechanical work is done by the department of printing. Of these departments Prof. N. A. Crawford is head.

Newspapers and other publications are invited to use the contents of the paper freely without credit.

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WEDNESDAY, JANUARY 17, 1917

THE MODERN PROFESSOR

A criticism that used to be commonly directed at colleges was that the men in them couldn't really do the things they were teaching. A professor of agriculture, the critics said, couldn't farm, an engineering teacher couldn't build a bridge, an English instructor couldn't write a book.

Years ago colleges met the criticism by insisting that men employed on the faculties should have practical knowledge of the things they were teaching. The result is seen not only in thoroughly practical instruction in educational institutions, but in important services performed by the institutions for their communities and states. Agricultural teachers are constantly called on for advice as to crops, soils, stock, and other subjects related to their profession. Plans for bridges and other public structures are sought from men engaged in instruction in engineering. Scores of other departments, each in its field, furnish information of incalculable value to modern industry.

The latest indication of the place occupied by colleges in practical life comes in the reports of the awards won in the year 1916 by live stock exhibited—and practically all of it bred—by the animal husbandry department of the Kansas State Agricultural college. To win 112 ribbons and prizes amounting to nearly \$3,000, to have every individual steer entered carry off an award, to win every first prize and championship offered on a breed at three shows—these form an achievement of which the most successful breeder might well be proud. This record is the record of the modern college professor—alert, practical, up-to-date, able to accomplish in non-academic life the results that he is trying to teach his students to accomplish.

STIMULATING A PEOPLE TO FARM

The Jews are not usually thought of as an agricultural people, though any one who recalls their ancient history knows that in olden times animal husbandry was their chief occupation. In the Christian era, it is probable that the laws unjustly excluding them from land ownership have done more than anything else to keep them in commercial rather than agricultural life.

It is interesting to observe that there is a society, the Jewish Agricultural and Industrial Aid Society, organized for the purpose of fostering farming among Jews. Land tenure is open to them as to any other citizen in the United States, as it probably will be soon in all countries, and the society is doing an important work in turning the tide of Jewish immigration into the open country instead of the crowded tenements of the cities.

The society was founded in 1900. Its basic activity is making loans to help

in the purchase of farms and other important agricultural purposes. Loans amounting to more than \$2,000,000 have been made to farmers in 35 states. As Gabriel Davidson points out in discussing the society in the Jewish Farm Almanac, it is a tribute to the character and stability of the Jewish farmer that the total losses have been less than 3 per cent.

The organization is active in numerous other directions. To it belongs the credit of publishing the oldest agricultural magazine in Yiddish. It maintains a bureau of information and advice for farmers and prospective farmers. It runs a farm labor bureau, the purpose of which is to enable the would-be farmer to gain experience before starting out on his own account. In nine years this bureau has found employment for nearly 7,000 persons.

In education the society takes special interest. It offers free scholarships in agricultural college short courses to sons and daughters of Jewish farmers and maintains a loan fund to assist students taking the regular agricultural courses.

The results of the society's work, it is safe to predict, will be found not only in restoring to agricultural life representatives of a people which will add to its scientific and economic sides, but in affording a successful example of coöperation for the general welfare.

RICE AND MACHINERY

The adjustment of modern machinery to rice culture has been slow.

Rice is the one crop that "contraries" the usual ethics of farming. The tractor has been juggled with many ways to fit it to the unusual condition.

It may be said that the best engineering brains of the country have been devoted to this particular tractor field—and with success, too. The tractor is now practically indispensable on the rice plantation.—Farm and Ranch.

A FORCE IN AGRICULTURE

I have the greatest respect for the agricultural college experts. These men are becoming a force. You rarely pick up a newspaper or magazine without learning something new and important these men have done for agriculture.

And they are getting results. Their influence penetrates the remotest sections, and the dullest farmers are realizing the importance of modern scientific methods. Farming is being commercialized in many places, and machinery introduced; farming is attracting capital, energy, and intelligence; it is being robbed of many of its objectionable features, to the benefit of every one.—Ed. Howe's Monthly.

BETTER FARM LIGHTS

We are entering an age of better lighting for farm premises and buildings. Heretofore electricity and gas have been economical for power and domestic use only when manufactured in large quantities. For the past ten years the change has been coming. The gas engine started it. Then the automobile came along and proved that the average intelligent man or woman could safely handle power machinery. Next followed improvements in storage batteries and electric bulbs which increased efficiency and reduced cost. Electricity can still be manufactured most economically in large quantities, but the cost of wires, meters, and general upkeep—the things necessary for distributing current in cities—makes the average city dweller pay more for his electricity than does the family that has its own farm plant.

Mantle lights, heated by either kerosene or gasoline vapor, have followed along till now for the price of a good old-fashioned kerosene lamp you can get a light of ten times its brilliancy at lower cost of operation.

With the different forms of improved lighting available, pleasant, sociable evenings, better light for reading and study, and an added measure of safety are all at hand. The "bright lights" of the country are just coming over the horizon of history. The dark age of farming is past.—Farm and Fireside.

CHILDREN AS MILKERS

Milking is a man's job, not one for a young boy or girl. Children cannot do this work properly. It is a physical impossibility; they are not strong enough. Besides the actual lack of strength, boys and girls are careless and irresponsible. It always has been so and undoubtedly always will be. Children cannot, from the very nature of things, assume responsibility, and for them to be given the great responsibility of milking is asking too much of them. The dairyman who will allow, or compel, his young children to do any considerable part of the milking, is making a serious mistake. He is sure to lose money in the long run. He will be benefiting himself financially if he will pay a competent person good wages to do

The regular meeting of the board of regents will be held on Tuesday, January 26.

A count yesterday shows 487 students in attendance, with new ones being added to the roll daily.

The printing department is printing the plates for Professor Walters' new text book on freehand drawing, fuller mention of which, with perhaps illustrations, will be made later.

E. M. Fairchild is spending a term in the Oberlin Theological seminary, expecting after a few months to return to Andover. He has lost no time from his studies by the accident of last October.

President Fairchild, after his ten days' illness, was greeted by the stu-

Were signs of life; and no sound but my heels.

Then, suddenly, high in a pine above An upland pasture edge I heard a soft,

Sweet, whispering twitter of a flock of birds,

And saw their rosy bosoms catch the light—

The evening grosbeaks, strangers from the North!

They did not sing, but talked among themselves

And kept seclusion in this friendly pine,

Not even scolding me, as if, perchance,

They knew not man—but thought me some odd deer

Or other woodland wanderer. The sun Was lower now, and in the west a glow

Of gold and salmon gleamed between the trees,

And purple shadows crept along the snow.

I thought how but the day before, in town,

A friend had pitied me, amazed because

I dwelt outside the whirlpool of New York

And had not seen the latest play, nor heard

Some magic concert in a scented hall. "What do you find to do up there?" he said.

I watched the sunset daggers through the pines,

I heard the soft, sweet cheeping of the birds,

The alien grosbeaks from their frozen North,

I let the sting of winter fill my lungs; And then I laughed, aloud. A scale of ice

Came rattling down and tinkled on the crust;

The grosbeaks fluttered in the dusking tree,

Then settled back to roost again. Once more

A hush of rose and silver wrapped the world.

SUNFLOWERS

"Spilling the beans" means more than it useter.

Don't burn your waste paper. There ain't no sich animal.

The eggs you buy nowadays are about 60 per cent unearned increment.

As soon as they isolate the germ that causes ukelele music, she will be shot.

There seems to be some disagreement as to who has won the European War.

If there were no fools in the world everybody would have to work for a living.

About the only right the pedestrian has left is a chance to get part of his hospital bill paid.

The average family represented in an auction bridge club consists of two and one-sixth members.

Sometimes, just to make a scenario sound different, they advertise it as "a story without a blush."

The fact that Mr. Harry Thaw tried to cut his own throat ought to be a pretty strong point for the defense.

The right to hire scalawag lawyers and keep intelligent men out of the jury box is one of the bulwarks of American liberty.

Federal Investigation, the highly touted phenom who threatened to break up the game as she is played, seems to be batting about 117.

The man who drinks no alcohol And does not smoke the filthy weed And eats no food he likes to eat Will live to be a centipede.

ESPECIALLY NOW

The lay of the lark may be lovely Out in some woody glen, But I prefer for my table The lay of the common hen!

—William Sanford in the National Courier.

Sheep and the American Farm

Dr. D. F. Houston, Secretary of Agriculture

IN some sections of the United States there has been a steady decline in sheep production since the earliest statistical reports. This has been true also in every other settled country except Great Britain. The explanation undoubtedly is an economic one. In general, the primary purpose of sheep growers has been to produce wool. This can not be attained profitably on high priced land. Naturally, therefore, with the increase in land values there is a rapid decline in the number of sheep. In Great Britain meat has been the principal product and wool the by-product, and the sheep industry has flourished.

If American farmers will follow the British custom, the industry can be put on a profitable and permanent basis. The greater number of sheep in Great Britain are raised in the hills and on land comparable to much of the "waste land" of American farms. The areas in the south, now relatively little used, can profitably be devoted to sheep production if the farmers will secure the proper breed of sheep.

Sheep also can be made profitable on higher priced land, as British experience shows. They compare favorably with other animals in economy of production. They require a minimum of expensive concentrated feeds. They exceed the other larger animals in the rate of maturity; lambs can be made ready for market at from four to six months. They make possible the economical and fuller use of labor. They are of assistance in keeping the farm free from weeds. The sheep farm is usually a weedless farm.

the milking rather than depend upon his children to do this work. A cow should be milked rapidly and thoroughly, and every time just alike, and at the same time proper manipulation of the udder should be given. Milking is a job that will stand very little carelessness, if you want the cows to do their best. If one does not understand the principles of good milking or if he can't or doesn't observe them, he cannot be a success as a milker. Children haven't a proper conception of the importance of milking and they are prone to be careless. A father who is a good milker himself and who has carefully observed that correct milking gives better results, knows well enough that children cannot do this work properly.

It is not out of place to have the boy milk the easy-milking cows, and the girl also may well try her hand, as this teaches them to milk, and no boy or girl should leave the farm without knowing how to milk, even though they never expect to do much of such work. Once the art of milking is learned it likely will never be forgotten. It may be that the cow the boy milks will not do her best, but he must learn this work by actual experience. When he becomes mature enough and has sufficient strength, and last, but not least, when he has sufficient judgment, then the responsibility of milking can be gradually placed upon him. But never should this be done until he has sufficient strength to do the job right.—Farmer and Stockman.

A QUARTER CENTURY AGO

Items from The Industrialist of January 16, 1892

Professors Rain and Mason are at their posts after a week's sickness.

Miss Flora Wiest, '91, attended the chapel lecture yesterday afternoon.

dents in chapel on Wednesday morning by a hearty round of applause. The President's sickness, the attending physician says, was due to overwork.

Mr. W. B. Lloyd, agricultural editor of the Farm, Field, and Stockman, of Chicago spent the forenoon at the college, and finding the time all too short for such a visit as he would like to make, promised himself a longer visit next summer. Mr. Lloyd attended the meeting of the state board of agriculture this week in the interest of his paper.

The weather for the week ending with today has been the coldest for many years, and is unusual for Kansas; while the stealthy manner in which the cold wave enveloped us added to the surprise with which we greeted a temperature of 23 degrees below zero Tuesday morning. The thermometer readings for the week follow: Tuesday morning at 7 a. m., —23; Wednesday, —18; Thursday, —12; Friday, —4; Saturday, —2.

THE EVENING GROSBEAKS

Walter Prichard Eaton in the New York Tribune

A silver hush was in the woods to-day Where frozen rain had gemmed each pendent branch

And laid transparent lacquer on the snow.

In open glades the low sun smote my eyes

As on a glassy sea, and under foot The constant squeak and crackle of my heels

Was strangely loud amid the silences. The hoofprint of a deer, a shredded cone

Left from a squirrel's meal, a pheasant's bed

Beneath a hardhack bush, a rabbit road

Packed hard before the rain came—these alone

AMONG THE ALUMNI

J. R. Little, '15, is teaching at Holton.

Miss Grace L. Craven, '14, is taking graduate work in the University of Chicago.

Miss Fannie Dale, '01, of Topeka was a vacation visitor at her home in Manhattan.

Miss Ethel McDonald, '07, of River Falls, Wis., spent the holidays at her home in Manhattan.

Miss Mae MacLeod, '10, is teaching in the home economics department of the Emporia high school.

Mrs. Myrtle (Oskins) Allis, '09, and little daughter spent the holidays with Mr. Allis's parents in Manhattan.

Miss Florence Caton, '15, is instructor in domestic art in the Illinois Wesleyan university at Bloomington.

Julius Van Vliet, '15, teacher in the high school at Madison, Nebr., was a visitor in Manhattan during the holidays.

Miss Anna E. Thomas, '15, of Bonner Springs, in sending her dues writes of her appreciation of THE INDUSTRIALIST.

Marshall Elsas, '07, who is now residing at 3912 Morrill avenue, Kansas City, Mo., sent his check for a paid up membership in the Alumni association.

Charles D. Clark, '12, spent the holidays with his parents in Manhattan. He is teaching in the high school at York, Nebr., and enjoying the work.

A. G. Kittell, '09, and Mrs. Marie (Fenton) Kittell, '09, of Omaha, Neb., with their small daughter spent Christmas at the Fenton home in Manhattan.

Junior Mudge, '14, spent part of the holidays with his parents in Manhattan. He has a good position with a chemical manufacturing company in Lawrence.

Otis N. Blair, '04, is still with the Larowe Construction company, but has moved from Twin Falls to Paul, Ida., where he is supervising the erection of a beet sugar factory.

D. G. Blattner, '11, is connected with the Western Electric company of New York City. His address is 228 West 11th street. He sends his dues together with best wishes for the New Year.

C. D. Pratt, '85, is president and treasurer of the Pratt Paint and Paper company of Dallas, Tex. He is still interested in the Kansas State Agricultural college and the projects of the Alumni association.

Earl H. Martin, '12, is director of the agricultural department of the Independent school, Nashauk, Minn. He sends his dues together with New Year's wishes for the college and everybody connected with it.

Philip Fox, '97, and daughter, spent the holiday vacation with his parents, Mr. and Mrs. S. M. Fox in Manhattan. Mr. Fox is professor of astronomy and director of Dearborn observatory, Northwestern university, Evanston, Ill.

The United States department of agriculture has just published a pamphlet on "The Silverfish: an Injurious Household Insect," written by C. L. Marlatt, '84. The bulletin is enumerated as number 681 of the farmers' series.

Mrs. Harriet (Dunn) Moore, '13, writes that she and her husband, C. Bela Moore, sophomore in 1910, are comfortably settled in a new farm home near Malta Bend, Mo. They find THE INDUSTRIALIST full of timely suggestions.

Victor L. Cory, '04, superintendent of the experiment substation at Krum, Tex., leaves in February for Freetown, Sierra Leone, West Africa. He will spend two and one-half years in agricultural development and assisting in missionary work.

The Rev. John Thackrey, '93, now district superintendent of the Methodist churches in Oklahoma, and Miss Cora Thackrey, '98, of Valentine, Nebr., were in Manhattan during the vacation, called here by the death of their sister, Mrs. Samuel M. Harris.

Mrs. Ethel (Justin) Marshall, '10, and young daughter, accompanied by Miss Florence Justin, '16, arrived on Christmas day to spend the winter with the home folk. William Marshall, '14, will return in early spring after finishing his course in Boston Theological seminary.

Lee Gould, '12, of Dodge City, writes: "I see that F. B. Nichols, president of the 1912 organization, is making an effort to get all the 12's possible to Manhattan for commencement in June and I am certainly in sympathy with the movement. I shall make an effort to get all the members of the class from this part of the country to come for the reunion."

Miss Clara Pancake, '03, writes concerning her change in location. In December she resigned her position in the department of home economics in the Iowa State Teachers' college and accepted the position of director of household arts, Philadelphia Normal school. As the department was established only last September, the outlook for Miss Pancake's work is particularly attractive. She writes that all alumni will be able to find her at the normal school, Thirteenth and Spring Garden streets.

The alumni editor spent a part of her vacation pleasantly as a guest in the home of Mr. William F. Droge, '10, and Mrs. Helen (Meyers) Droge, '13, near DuBois, Nebr. Their charming little daughter, Betty, and young son, Frederick, are delightful entertainers. Mr. Droge is secretary of the Farmer's Union Coöperative association which operates a grain elevator in DuBois. The Drogés are planning to move to Montana in the spring. Mr. Droge has filed on a homestead in the Fort Peck reservation, recently opened to settlers.

Miss May Secrest, '92, has been given a year's leave of absence from her work in the Polytechnic school at San Luis Obispo, Cal., and is spending the year in Columbia university. She writes:

"There are 1000 members of the Graduate Women's club. It is very stimulating to meet these people, who come from all over the civilized and uncivilized world. New York is certainly a place of absorbing interest. Wilhelmina Spohr, '97, is instructor in household arts education. I stopped a few days in Washington, on my way, with Julia Pearce, '90, and met a number of K. S. A. C. people, Professor Lantz, Mark Carleton, '87, Mr. Mason, '90, Charles Doane, '96, and Maud Kellerman Swingle."

BIRTHS

Born, to Mr. M. L. Gould, '14, and Mrs. Velora (Fry) Gould, '14, Jamestown, on January 2, a son.

Born, to Mr. and Mrs. H. S. Gish, '14, of Manhattan, on January 8, a daughter, Golda Lucile.

Born, to Mr. Wray R. Reeves, '10, and Mrs. Cora (Drown) Reeves, '15, Sundance, Wyo., on December 12, a son, Max Drown.

Born, to Mr. R. A. Baldwin, '13, and Mrs. Beatrice (Salisbury) Baldwin, Atchison, on December 19, a son, Raymond Albert.

MARRIAGES

SANDT-GLIDDEN

Miss Margherite Myrtle Sandt and Mr. Chase E. Glidden, Jr., were married December 30 at the home of the bride's parents, Mr. Victor Irwin Sandt, '94, and Mrs. Sandt, in Kindersley, Sask.

BENNETT-HUNGERFORD

Miss Ruth Bennett and Mr. DeForest Hungerford, '10, were married at the home of the bride's mother, Buckingham Place, Fort Worth, Tex., December 22. Mr. Hungerford is assistant professor of agronomy in the University of Arkansas, Fayetteville.

SCHOWALTER-MOODY

Miss Pearl E. Schowalter, '16, and Mr. Leon N. Moody, '16, were married December 27 at the home of the bride's parents, Mr. and Mrs. A. I. Schowalter, at Halstead, the Rev. John Milton Oliver officiating.

Mr. and Mrs. Moody will live at Riley, where Mr. Moody is engaged in farming.

SCHRIVER-LENTZ

Miss Evelyn Schriver, '16, and Mr. Harold L. Lentz were married on New Year's day at the home of the bride's parents, Mr. and Mrs. G. A. Schriver of Halstead. The ceremony was performed by the Rev. W. B. Robertson, pastor of the Methodist church.

Mr. Lentz is a graduate of the University of Kansas, in which he is now teaching, and he and Mrs. Lentz will be at home in Lawrence.

DEATHS

MRS. ETHEL PING SHAFER

Mrs. Ethel Ping Shafer died December 28 at her home in Anderson, Ind. She is survived by her husband and one child.

Before her marriage, Mrs. Shafer was for four years instructor in piano in the college department of music.

MRS. JEREMIAH E. PLATT

Mrs. Jeremiah E. Platt, widow of the late Professor Platt, died at St. Joseph, Mo., Tuesday morning, January 9. The funeral was held at the Congregational church, Manhattan, on the morning of January 11, the Rev. R. J. Voris officiating.

Professor and Mrs. Platt were residents of Manhattan for many years, the former having been on the faculty of the college from 1866 to 1883. It was in the Platt home that THE INDUSTRIALIST was first printed in 1875. Professor Platt died some years ago.

MRS. S. M. HARRIS

Mrs. S. M. Harris died December 23 at her home on College Hill.

Mrs. Harris is a daughter of a pioneer family, the Thackreys of Wabau-see and Riley counties. Practically all her days were spent in Kansas. She came here at the age of five and was one of the oldest children of a large family. When teaching school she met Mr. S. M. Harris. They were married 35 years ago. Eleven children came to the home of Mr. and Mrs. Harris. All of them grew to manhood and womanhood except one, Paul, who died in infancy.

The surviving children are Mrs. May Burt, '05, of Boulder, Col.; Mrs. Maud Gaston, '08, of Harvard, Ill.; Frank Harris, '08, of Manhattan; Lynn Harris of Caldwell; Mrs. Carrie Totten, '10, of Clifton; Richard Harris, '12, of Parsons; Miss Vida Harris, '15, of Austin, Tex.; and Miss Zora, Miss Verda, and Miss Florence Harris, all of Manhattan. Mrs. Harris is also survived by a number of brothers and sisters, of whom the following were present at the funeral: S. Thackrey; the Rev. John Thackrey, '93, of Tulsa, Okla.; W. E. Thackrey, '96, of Valentine, Nebr.; Mrs. Harriet (Thackrey) Reese of Simeon, Nebr.; and Miss Cora Thackrey, '98, of Valentine, Nebr.

PLEDGES LIFE MEMBERSHIP

W. J. Lightfoot, '81, of San Francisco, Cal., sends his pledge for a life membership as follows: "I will give \$20 for a fund to be loaned to deserving students. Such a fund would have helped me once."

KANSAS ARCHITECT IN OREGON

L. Dougan, junior student in the architecture course of the college in 1911, writes to Prof. J. D. Walters from Portland, Ore., that the firm of which he is the junior member, has just landed the job of preparing drawings and specifications for a new \$800,000 hotel in that city. A copy of the Sunday Oregonian, which Mr. Dougan sends, prints the front elevation of the new hotel—a monumental seven story structure of decidedly modern form.

ALUMNI AT INSTITUTE

Five graduates of the college were on the program of the recent farmers' institute at Ottawa: G. W. Tulloss, '99, banker and stockman of Rantoul; H. M. Bainer, '00, agricultural agent of the Santa Fe railway; Charles A. Scott, '01, state forester; Carl P. Thompson, '04, live stock specialist in the college extension division; and Hubert L. Popenoe, '09, agricultural agent of Lyon county. Among former students present was W. O. Lunt, who was in attendance at the college in 1867.

TEACHING IN TEXAS

Miss E. June Milner, '14, of Beaumont, Tex., in sending her dues writes as follows:

"I am very much interested in the student loan project and hope that I may take out a life membership in the near future.

"THE INDUSTRIALIST reaches me each week and I certainly appreciate having it. It does seem good when one is so far away.

"I am enjoying my work very, very much and find many new and interesting conditions in the South. I can scarcely realize that I am so far removed from winter."

APPRECIATES ALUMNI NEWS

Editor Alumni Column:

I have just finished reading THE INDUSTRIALIST and since the alumni news means so much to me I just want to drop a word of appreciation for your part in it. I rejoice in every new achievement of dear old K. S. A. C. and of her alumni and such news is gladly welcomed.

This is my second year as domestic art teacher in the Allison school and I enjoy my work so much.

At the State Teacher's association held here last month, I felt myself particularly fortunate to see two K. S. A. C. people, Miss Gugenhan, '12, and Miss Fitzgerald. Both are teaching in the state. Best wishes to you.

Sincerely yours,
ANNA SEARLE, '13.

Santa Fe, N. M.

SUCCESS IN ENGINEERING

TO THE INDUSTRIALIST:

Please find inclosed my personal check for the sum of one dollar in payment of my annual dues beginning June, 1916.

I think the paid up membership plan is an ideal one and certainly has a noble purpose, consequently my intention is to take out a paid up membership in the not distant future. Am glad to learn that so many have responded already and hope that others will follow as soon as they are able.

You might be interested to know what I have been doing since my graduation, class of 1913, so I will briefly relate such. After graduation I entered the student engineering course given by the General Electric company at Schenectady, N. Y., where I stayed until the fall of 1914, when I went to the University of Maine as instructor in electrical engineering. There I stayed two years. In June, 1916, I went to the General Electric company, this time at Pittsfield, Mass., in the capacity of transformer designing engineer for the summer. Having my present position offered me, I accepted and came to Texas. I am assistant professor in electrical engineering, and have had one advancement since coming here, made possible by the assistant professor ahead of me leaving and my assuming his duties. This also makes necessary a corresponding increase in salary, which of course is acceptable.

I like my work here. The other members of the department are very congenial and we have a splendid equipment with which to work.

Kansas is very well represented down here. I have, so far, met Messrs. Wermelskirchen, Leidigh, Wood, and Hansen.

Wishing you and the association a very prosperous New Year. I am,

Very truly yours,
W. G. JAMES, '13.

College Station, Tex.

SPRAY SCHEDULE WON'T BE GOOD FOR ALL TIME

Common Practice Today May Become Obsolete Tomorrow. Points Out Horticulturist—Differs for Various Places

A spraying schedule good for all time is an impossibility, because what is considered good practice today may be obsolete tomorrow, asserts George O. Greene, specialist in horticulture in the Kansas State Agricultural college.

"Steady progress is being made in spraying, the same as in other lines of agriculture," said Mr. Greene. "A spray schedule cannot be made that will fit all localities equally well. Each grower must take the general schedule and change it to fit his locality, the variety of fruit he is growing, and the particular conditions with which he has to deal.

"As is well known, the scab is a northern disease and the grower in northern Kansas would not use the same schedule as the man in southern Kansas who does not encounter apple scab.

"Apple blotch, being a southern disease, has been serious in southern Kansas. The same spray schedule then used in southern Kansas for blotch would not fit other sections of the state, where blotch is not so serious.

"Most of the plant diseases for which the grower must spray are to be found worse on some varieties than on others. Such varieties as Missouri pippin, Arkansas black, Ben Davis, and maiden blush, which are very susceptible to blotch, would need to be sprayed with a much stronger application of Bordeaux mixture than would some varieties like Jonathan, Grimes, and winesap, which are less susceptible.

"The spray mixture and the method of its application is another thing of just as great importance to the grower as the spray schedule. Unless the mixture is properly made and then properly applied the grower will be dissatisfied with the results no matter how closely he follows the schedule. When the trees show a strip of good clean fruit, then another strip of blotched and wormy fruit, and perhaps below this still another strip of clean fruit, it is a pretty good indication that the man who held the spray rod did not know his business.

"The grower can say that he has acquired skill in spraying when he has learned to apply from five to seven gallons of the liquid on a 15-year old tree so that it will not drop off and each leaf will be covered as if it were in a heavy fog. He can say that he knows how to compound his spray mixtures when he can mix Bordeaux and apply it when the weather is cold and wet, at the same time causing no burn even on susceptible varieties like Ben Davis and Jonathan."

HOT WATER BEST WAY TO THAW FROZEN PIPE

It's Still Better, Though, to Keep Plumbing from Freezing by Proper Covering

The application of hot water is the best method of thawing water pipes in the belief of Jacob Lund, superintendent of heat and power in the Kansas State Agricultural college.

"The first thing to do when a frozen pipe is discovered is to examine it to see if it has bursted in freezing," explained Mr. Lund. "If cracks are found the water should be turned off above the pipe and hot water poured over it.

"A better way to take care of water pipes is to keep them from freezing," said Mr. Lund. "Exposed pipes should be covered with cork or asbestos covers which are molded to the exact size of the pipe and are easily applied even by unskilled workers.

"Freezing in an uncovered pipe may be prevented by allowing a small stream of water to flow continuously through the pipe. This keeps all the water in motion and prevents the formation of ice. This method, however, should be used only as a temporary expedient, for if allowed to run long the water will soon cost so much that it would be cheaper to have the pipe covered."

PROFESSOR LEE IS DEAD

ONLY SURVIVOR OF EARLY COLLEGE FACULTY PASSES AWAY

Was Professor in Institution for 10 Years, Teaching Literary Subjects—Engaged in Parochial and Educational Work During Long Career

The last surviving member of the old classical faculty of the Kansas State Agricultural college, the Rev. James Hervey Lee, died Monday, January 8, at his home west of the college. He was 86 years of age.

The Rev. Professor Lee was born in Savannah, Ohio, in 1830. After working his way through Kenyon college and Bexley Divinity school, he took holy orders in the Episcopal church. In 1866 he came west to become rector of St. Paul's church, Manhattan.

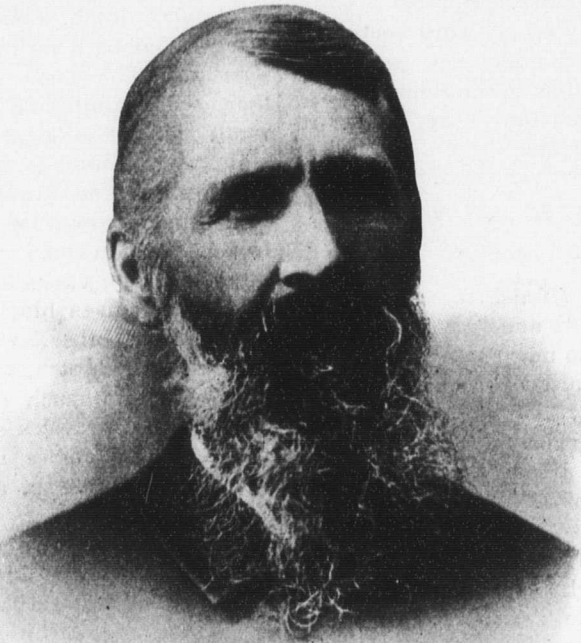
The Kansas State Agricultural college had been but recently organized through the gift to the state of Blue-mont Central college, and the instruc-

"Professor Lee remains and will remain so long as I live among my most cherished memories of long ago. For I can conscientiously say that you made the greatest impression upon my life of any teacher, of any man that I ever knew. . . . You, it was, who saved me and made me of what use I may have been to others by your confidence and belief in me when I felt tempted to waste my life."

BISHOP OFFICIATES AT FUNERAL

The Rev. Professor Lee is survived by a daughter, Miss Mary E. Lee of Manhattan, and by two sons, William Lee of Washington, D. C., and Jay Lee of Kansas City, Mo., as well as by three brothers, Joseph M. and F. C. Lee of Kansas City, and William Lee of Manhattan, and one sister, Mrs. J. H. Prescott of Salina.

The funeral was held in St. Paul's church January 11. The Right Rev. James Wise of Topeka, bishop of the diocese, and the Rev. Allan Grant



THE REV. JAMES HERVEY LEE

tion was still to a large extent classical.

ELECTED TO COLLEGE CHAIR

Upon learning that Mr. Lee was to come to Manhattan, the regents elected him professor of Latin language and literature. He taught in this department for four years, in the last of which Greek was also added to his work. From 1870 to 1871 he taught agricultural classics; from 1871 to 1874, Latin and English literature; and from 1874 to 1875, English and history.

In 1875 Professor Lee resigned his position in the college and opened an academy of languages. In 1880 he became county superintendent of schools, which position he held for 11 years. He then became head of the department of English literature in St. John's school at Salina, resigning from this work after a number of years of service.

ACTIVE AS MISSIONARY

The Rev. Professor Lee was in charge of St. Paul's church, Manhattan, for several different periods. He also officiated in numerous other parishes, doing effective missionary work even in the later years of his life. He was for some time dean of the Northwest convocation of the Diocese of Kansas. He was regarded always as an earnest parish priest and a scholarly and effective preacher.

Perhaps the most far reaching influence exerted by Mr. Lee was upon his students. He was one of the best classroom teachers in the early faculty of the agricultural college, and kept in close personal touch with the students.

RAISED EDUCATIONAL STANDARDS

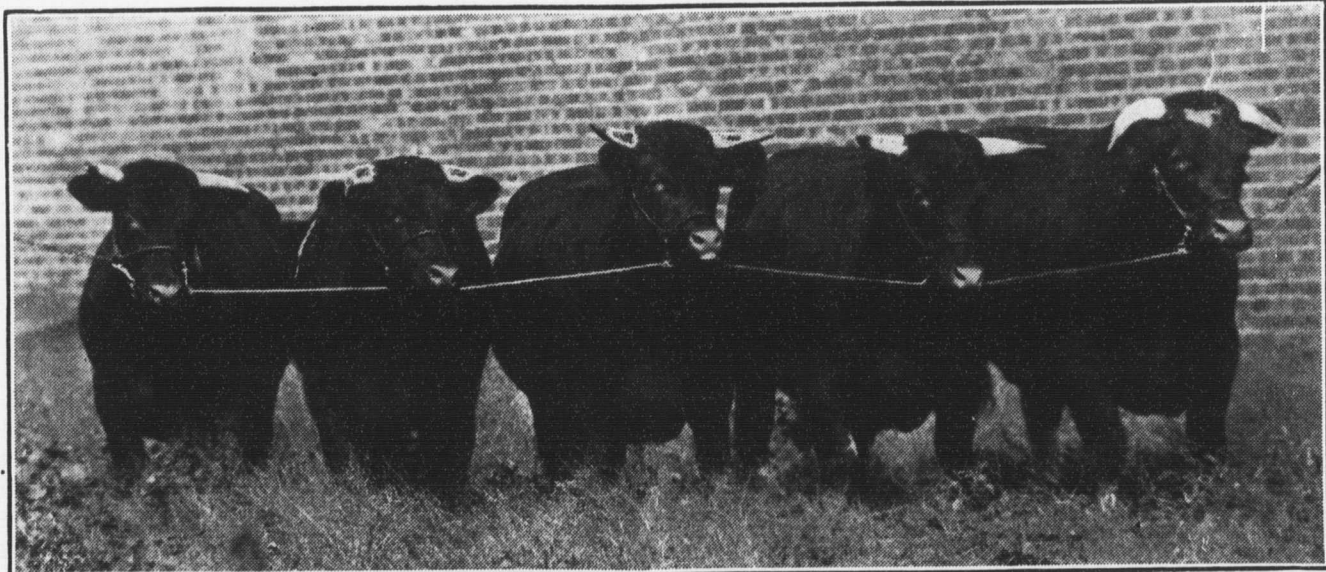
While county superintendent of public instruction, he raised the standards of education steadily, and pupils in every rural schoolhouse in the country had reason to thank Superintendent Lee for a better education.

Among his students in the college was Dr. Samuel Wendell Williston, now professor of paleontology in the University of Chicago. Doctor Williston wrote some time ago to Professor Lee:

Wilson, priest in charge of the parish, officiated. The church was crowded for the service.

Dr. Edward H. Reisner, associate professor of education in the college, reviews Ernest Carroll Moore's recent work, "What is Education?" in the Journal of Philosophy, Psychology, and Scientific Methods. Doctor Reisner's contribution is one of a group of reviews by leaders in the field of scientific philosophy.

There were cut from the national forests in the fiscal year 1916, 604,920,000 board feet of timber. Of this



A GROUP OF STEERS ALL Sired BY MATCHLESS DALE, SHORTHORN BULL OWNED BY THE KANSAS STATE AGRICULTURAL COLLEGE

amount 119,483,000 board feet was cut under free use privilege by 42,055 individuals. In all, 10,840 sales of timber were made, of which 97 per cent were under \$100 in value, indicating the extent to which homesteaders, ranchers, miners, small millmen, and others in need of limited quantities of timber draw upon the forests.

WINTER CARE FOR CALF

PROPER ATTENTION NECESSARY FOR DEVELOPMENT OF ANIMAL

Size Is as Desirable in Dairy as in Beef Stock, and Feeding and Protection Are Especially Important in Cold Weather

Dairy calves should be given proper care and attention during the winter months to insure normal development, according to J. B. Fitch, associate professor of dairy husbandry in the Kansas State Agricultural college.

"For the first six months the calves may be fed skim milk," said Professor Fitch. "They should be fed alfalfa hay and some grain such as oil meal, oats, corn chop, and bran. They may be offered silage, but not much will be eaten while they are on a skim milk ration.

DISCARD WHOLE MILK EARLY

"After the first month whole milk is not necessary for growing calves, but since it is so much more expensive should not be used, as grain can be substituted for the butter fat of the milk.

"Silage and alfalfa hay form the principal feed for calves more than six months old during the winter months. Some grain should be fed. Four parts of corn chop, two of bran, and one of oil meal make a good ration. Another valuable ration is four parts of corn chop and one of oil meal. Two or three pounds a day should be fed until near calving time, depending upon conditions. Enough grain should be fed to keep the animal in good flesh and in a growing and thrifty condition. Size is as desirable in dairy as in beef animals.

WARMING WATER ECONOMICAL

"Heifers should have a shed to furnish some protection although they can run in the lot in the daytime. The grain should be fed inside and the alfalfa and silage in suitable places outside. It saves feed if the water is warmed, especially in severe weather.

"Dairy animals not to be used for show purposes should have their horns removed. This may be done by applying caustic potash on the horns of the calves before they are a week old.

"The best age to have heifers freshen depends upon the size and thriftiness of the animal, but in general Holsteins and Ayrshires should freshen when they are about 30 months old, and Jerseys and Guernseys at the age of 26 to 27 months."

COTTONSEED FEED HAS BUT HALF THE VALUE OF MEAL

Inspector Warns Stockmen Against Purchase of New and Inferior Product

Stock feeders are warned against buying cottonseed feed, which resem-

to make it resemble cottonseed meal both in appearance and in name.

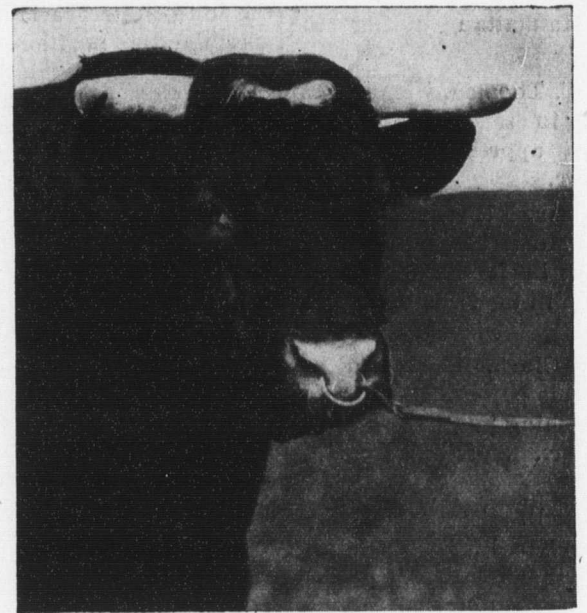
"Cottonseed feed is a mixture of cottonseed hulls and low grade cottonseed meal. It is usually sold for a few dollars less a ton, or a few cents less a hundred pounds than cottonseed meal. It has only about half the feeding value of choice cottonseed meal and is in reality a much more expensive feed to buy.

"In some cases dealers are attempting to deliver old cottonseed cake or meal in filling contracts for new cake or meal."

DAIRY ASSOCIATION WILL PRESENT STRONG PROGRAM

Specialists from Other States to Speak at Annual Meeting February 7

A strong program has been announced for the annual meeting of the Kansas State Dairy association which will be held at the agricultural college February 7 in connection with Farm and Home week. The speakers



MATCHLESS DALE, SHORTHORN HERD BULL. THIS BULL HAS Sired MORE FIRST PRIZE AND CHAMPIONSHIP STEERS THAN ANY OTHER BULL OF ANY BREED, LIVING OR DEAD

will include F. B. Hills, publicity man for the American Guernsey Cattle club; and John B. Irwin of Minneapolis, who will give his experiences in breeding Holsteins.

Dr. L. W. Goss, professor of pathology in the college, will speak on "Some Common Diseases of Dairy Cattle." Theodore Macklin, instructor in rural economics, will discuss "Profitable Methods of Marketing Butter Fat."

Mr. Irwin is one of the best known breeders of Holstein cattle in the United States, and a director of the Holstein-Friesian association. He is owner of Duchess Skylark Ormsby, the world's record dairy cow of all

STOCK PRIZES TOTAL 112

(Concluded from Page One)

Galloways at Denver, Kansas City, and Chicago.

Probably the most notable winning for the herd was the first prize for three steers, calved since January 1, 1914, and sired by one bull. This was won by sons of Matchless Dale, the bull at the head of the college shorthorn herd. In the Clay-Robinson specials, the first prize for the best group of five steers was also won by five of his sons. This is the first time in the history of the International that the first prize in either of these two classes has been won by cattle bred by a college. The group of five steers was generally recognized as the best group of five shorthorn steers ever assembled at the International, which has the largest show of shorthorn steers in the world.

Of the 16 college bred steers shown in grade and in pure-bred classes there was not an individual which failed to

be placed among the prize winners. The record made by these steers stands for constructive work not only in the selection of individual cattle, but also in the selection of breeding cattle capable of producing animals which can compete with the best in the United States.

COLLEGE WINNINGS IN DETAIL

The winnings of the college cattle in detail follow:

Championship—Aberdeen Angus, one; Galloway, two; grade Hereford, one; shorthorn, five.

Reserve championship—Aberdeen Angus, one; Galloway, two; shorthorn, five.

First prize—Aberdeen Angus, three; Galloway, 12; Hereford, one; grade Hereford, nine; shorthorn, 17.

Second prize—Aberdeen Angus, four; Hereford, 11; grade Hereford, two; shorthorn, five.

Third prize—Aberdeen Angus, one; Hereford, seven; grade Hereford, six; shorthorn, two.

Fourth prize—Aberdeen Angus, one; Hereford, five; grade Hereford, two; shorthorn, four.

Fifth prize—Galloway, two; Hereford, one.

KANSAS BREEDERS AT TOP

Honors won at the recent International by Kansas cattle were not restricted to the college stock. The grand champion Hereford bull was bred, fed, and shown by R. H. Hazlett of Eldorado, while the grand champion Galloway bull and Galloway cow were both exhibited by Croft and Sons of Bluff City. Achenbach Brothers of Washington made a very creditable showing of polled Durhams, and Sutton and Porteous of Lawrence, a creditable showing of Aberdeen Angus cattle. Of the 17 individual championships awarded to breeding and fat cattle, five went to Kansas, three to Illinois, three to Indiana, two to Missouri, two to California, one to Washington, and one to Iowa.

breeds which has produced 27,761 pounds of milk and 1,205 pounds of butter fat in a year.

A dairy butter, market milk, and creamery butter exhibit and contest will be held in connection with the meeting. Those desiring particulars should write to Prof. J. B. Fitch, Manhattan, for application blank in the division desired.

bles cottonseed meal, but has only half the feeding value, by A. E. Langworthy, feeding stuffs inspector in the Kansas Agricultural Experiment station.

"The high price of choice cottonseed meal and the consequent demand for a cheaper product," said Mr. Langworthy, "have induced manufacturers to offer this product. They have tried

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TO REDUCE BEEF COST

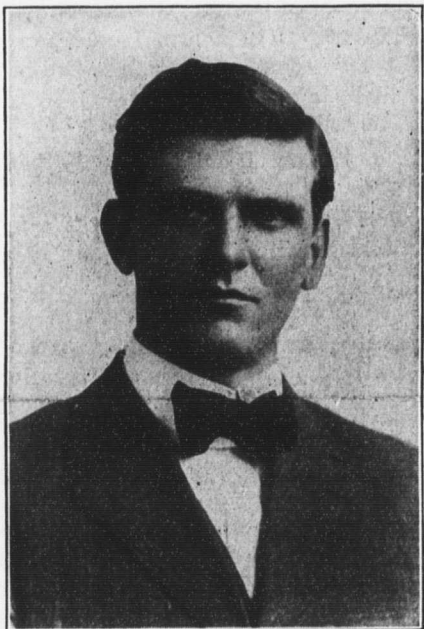
BUSINESS METHODS WILL LOWER EXPENSE OF PRODUCTION

Prof. W. A. Cochel Points Out Importance of Modern Practice to Cattleman—Presents Accurate Data at National Stock Meeting

Apply business methods and reduce the cost of producing beef. This was the counsel given by W. A. Cochel, professor of animal husbandry in the Kansas State Agricultural college, to the American National Live Stock association at Cheyenne, Wyo.

The cattleman, Professor Cochel pointed out, may realize on both his brains and his financial capital if he masters all phases of his work and alters his plans as new conditions confront him.

"One of the most unsatisfactory situations revealed by an analysis of the cattle industry," said Mr. Cochel, "is a paucity of accurate figures relating to the cost of producing meat animals. There are men engaged in this business whose incomes indicate that they are far above the average as business men, yet few are able to state the



PROF. W. A. COCHEL

exact cost of maintaining animals of various ages through a period of 12 months.

WHY DATA ARE SCARCE

"The reason for this state of affairs is plainly evident. No two years are exactly alike; the yield per acre as well as the nutritive value of the feeds produced from year to year is variable. The amount of feed required to carry an animal through a winter that is normal may be inadequate during one that is severe, or more than ample during one that is open.

"Because of general industrial conditions the breeding herd which can be considered as capital stock may be greatly reduced or greatly enhanced in value. The percentage of calves weaned from the cows bred annually may vary from 50 to 100, due to causes over which the cattleman has little, if any, control.

"Three years must elapse before any income whatever may be derived from a group of calves purchased for the purpose of developing a breeding herd. During this time the owner must await with an abiding faith, the condition of the market upon which his surplus is to be offered."

RESULTS FROM KANSAS STATION

Professor Cochel explained that the Kansas Experiment station in the fall of 1913, purchased 100 head of high grade Hereford heifer calves to be developed as a herd of breeding cows. Accurate data have been assembled as to the kind and amount of feed consumed, losses incurred, and labor involved in their production.

The figures indicate that a range bred heifer calf weighing 325 pounds at weaning time and wintered on one pound of cottonseed meal together with all of the silage and straw she will eat, will consume per day for six months slightly more than 25 pounds of silage together with one-half pound of wheat straw. During the winter of 1913-'14, which was one of high prices for all kinds of feeds, this cost 6.7 cents per day. Allowing \$4 for pasture and \$2 for labor and equipment charges, estimating interest and taxes at prevailing rates, and allowing for a 2 per cent loss during the 12 months, the total outlay or cost, including the \$30 paid for the calf, would be \$51.60 one year from weaning, or when the heifer was 18 months old.

COST OF WINTERING REDUCED

During the second year the cost of wintering was reduced, as rougher feeds, such as stover, were used, the consumption of straw was increased, and the length of the winter feeding period was reduced from six to five months. There was also a greater abundance of feed which affected the prices of feed. The total cost to the age of 30 months was found to be \$70.97. The heifers were bred in the summer of 1915 so as to calve in April and May, 1916.

The total cost of maintenance from the fall after breeding until the calf was weaned amounted to \$22.14—the cost of carrying a breeding female one year. This amount not only includes interest, labor, taxes, and other charges but represents also a material profit in the production of the crops which were fed to the cows—an excellent market for the by-products of grain farming usually practiced in the great plains area.

WHAT EACH CALF COSTS

The actual cost of producing calves under conditions usually found in the cattle producing sections of the country is thus found to be, with a 100 per cent calf crop, \$22.14 each; 90 per cent, \$24.60; 80 per cent, \$27.67; 70 per cent, \$31.63; 60 per cent, \$36.90. No depreciation is charged against the breeding herd except for actual losses because the individuals which proved to be undesirable for any reason, were worth more on the market than their cost of production.

These cattle were kept growing all the time. The total amount of feed consumed during the three years, other than that actually produced on the farm, was \$5.09 at prices prevailing when fed, or \$5.75 at present prices. The pasture charge was figured a little higher than is usually allowed in western Kansas but probably not more than enough to include maintenance of fences, salt, and other expenses usually incurred in grazing. The cost is materially influenced, Professor Cochel pointed out, by the percentage of calves weaned. This is one item, he said, which should be carefully considered by those whose calf crops fall below 80 per cent as it may mean the difference between profits and losses for a series of years.

BASED ON PRACTICAL CONDITIONS

"These results," commented Professor Cochel, "have been secured under the most practical conditions although material reductions might have followed from the extensive use of wheat pasture, limiting the feeding to stormy weather, and other economies which the assembling of accurate data prohibited. The farmer or ranchman could have taken advantage of these conditions which the purpose of the experiment made inadvisable.

"When cattle have paid for the feed, labor, interest on the investment, and taxes involved in their production, the return to their owner has been adequate. Any further profit must be due to the business ability of the man. In

(Concluded on Page Four)

FED MILLIONS TO BUGS

KANSAS LOST ENORMOUS SUM TO INSECTS IN 1916

Hessian Fly, Green Bug, and Fruit Pests Caused Heavy Damage—Control by Scientific Methods Is Checking Crop Destroyers

The Kansas feed bill for insects in 1916 was \$40,000,000, according to George A. Dean, professor of entomology in the Kansas State Agricultural college. In other words, had the crops destroyed by pests last season been marketed, the proceeds would have been sufficient to build seven permanent 16-foot roads across Kansas from east to west.

"Damage by the Hessian fly in 1916 is estimated at \$14,000,000 as compared with \$16,000,000 in 1915," said Professor Dean. "While the corn ear worm annually causes a loss of from \$5,000,000 to \$7,000,000 worth of corn, the destruction was not so great in 1916 because of shortage of crops caused by dry weather.

LITTLE LOSS FROM CHINCH BUG

"Due to the wet season of 1915, practically no injury was done by the chinch bug in 1916, but in 1913 and 1914—both wet years—\$15,000,000 worth of crops were destroyed and considerable damage was done in the spring of 1915."

The green bug, which caused the loss of at least \$5,000,000 in 1907, pointed out Professor Dean, was not a serious menace again until 1916 when the damage to Kansas and Oklahoma crops, according to government statistics, was approximately \$19,000,000—the figure for Kansas being approximately \$6,000,000. Crop destruction by grasshoppers amounted to millions in 1913, and a similar invasion threatened in 1914 was controlled by prompt cooperation of the Kansas Agricultural Experiment station and the farmers following the loss in 1913.

COULD CUT FRUIT DAMAGE

Fruit insects destroyed 20 per cent of the entire fruit crop and garden insects 15 per cent of the garden crop in 1916. This waste of from \$25,000,000 to \$40,000,000 in Kansas each year, believes Professor Dean, might be lowered to \$4,000,000 or \$5,000,000, or even less, were proper methods of control generally adopted. These methods usually increase the yield of crops as well as destroy insects.

The enormous tax upon the crops of Kansas would be much more were it not for the careful investigations of the experiment stations and of the United States department of agriculture.

COÖPERATE IN CONTROL

Methods of control resulting from these studies of experiment stations and put into operation by farmers have done much to check and in some cases even to eliminate the ravages of insects.

The result of such work was shown by the checking of grasshoppers in 1914 by the organizing of farmers of 13 counties in western Kansas in the summer of 1913. In cooperation with the college 1,000 tons of bran was used in the destruction of grasshoppers that year. Had these not been destroyed they would have threatened the entire crop of 1914.

BEE KEEPERS MEET AT AGRICULTURAL COLLEGE

D. von Riesen Heads Northwest Section of Association—Resolution Asks Appropriation for Inspection

D. von Riesen of Marysville and Harry Huff of Chapman were elected president and secretary-treasurer, respectively, of the northwest section of the Kansas Bee Keepers' association at a meeting held at the agricultural college Monday.

A resolution was passed asking the

legislature for an appropriation of \$5,000 for bee inspection work in Kansas.

Papers were read by Charles D. Mize of Mount Hope, Dr. J. H. Merrill, assistant professor of entomology in the college; George A. Dean, professor of entomology; H. F. Roberts, professor of botany, and George O. Greene, specialist in horticulture, division of extension.

IT PAYS IN DOLLARS AND CENTS TO BE KIND TO SOW

Animal Should Be Made Comfortable at Farrowing Time, Says Specialist in Extension Division

Kindness has an economic value in the handling of hogs, according to Carl P. Thompson, specialist in animal husbandry, division of extension, Kansas State Agricultural college.

"The wild sow usually is cross at farrowing time," said Mr. Thompson. "If she is terror stricken when the attendant comes around she may tramp on the pigs.

"Most sows need some attention at farrowing time if the weather is cold. The pigs may get away from the sow and will become chilled if not put back. If the sow is tame it will be an easy matter to give any assistance necessary. The saving of the litter occasionally depends upon prompt aid.

"The sows should be kept in a comfortable, well bedded place, so they will not pile up in cold weather. It is well to have guard rails in the farrowing house, eight inches from the wall and eight inches from the floor."

KANSAS FARMER SELECTS YOUNGGREEN FOR MANAGER

Agricultural Paper Chooses Well Known Topeka Man for Business Position

Charles C. Younggreen, well known to students and alumni of the college, is the new general manager of Kansas Farmer, Topeka. Mr. Younggreen was recently promoted from the position of advertising manager.

Mr. Younggreen visited the college last year and spoke at the student assembly and to the students in industrial journalism, giving many suggestions on the subject of advertising directed to the farm reader.

BROOD MARE SHOULD HAVE PROPER FEED THIS WINTER

High Price of Grain Tends to Make Some Owners Stingy

Proper feed for the brood mare in winter is not given due consideration in seasons of high priced grain, in the opinion of Dr. C. W. McCampbell, associate professor of animal husbandry in the Kansas State Agricultural college.

"An increased number of complaints regarding mares which have lost their colts are always noted in years of high priced feeds," said Doctor McCampbell. "This condition is due primarily to two reasons. The mare owner, being desirous of carrying his mares through the winter as cheaply as possible, depends largely upon such roughages as prairie hay, cane, kafir, and corn fodder. This kind of a ration is constipating, and such a condition prolonged often causes abortion.

"When feeds are as high as they are at present, one is tempted to reduce the amount given, especially the grain portion of the ration, but he usually finds this to be expensive economy in the case of the brood mare. In order to raise the maximum number of colts the brood mare must be well fed and cared for, and if one is compelled to rely largely upon roughages, bran and linseed oil meal should be added to the ration."

NOTED EDUCATOR DEAD

DR. EDWARD T. FAIRCHILD WAS LEADER IN AMERICAN LIFE

Made Brilliant Constructive Record in Kansas and Later in New Hampshire—Stood Always for Modern Principles in Schools and Colleges

WHAT FAIRCHILD ACCOMPLISHED

1. Intelligent economy in school administration.
2. Development of rural schools through reorganized courses of study, consolidation, and state aid for weak districts.
3. Normal training, manual training, agriculture, and home economics in the high schools.
4. Higher professional basis for the certification of teachers.
5. The certification of institute instructors.
6. The merit system of selection and tenure of all teachers.
7. The reorganization of public schools, high schools, colleges, and universities, to meet urgent public needs.
8. The unification of the system of public education from the kindergarten to the graduate school.

Dr. Edward Thomson Fairchild, president of the New Hampshire State college, died of tuberculosis at Durham, N. H., Tuesday. He was 62 years old.

Doctor Fairchild was born in Ohio, but came to Kansas when a young man, and for more than a quarter of a century was closely identified with its educational life. He was for a number of years superintendent of the Ellsworth schools.

BETTERED KANSAS EDUCATION

In 1907 he became state superintendent of public instruction, holding this position five years. During his term of office much was done through his efforts for the betterment of Kansas educational conditions. He was for nearly 10 years a regent of the Kansas State Agricultural college. He received an honorary degree from this institution.

In 1912 Doctor Fairchild resigned the state superintendency to become president of the New Hampshire State college. In the same year he was elected to the presidency of the National Education association. In spite of his illness, which had extended over a considerable period, he was making a strong constructive record in New Hampshire.

DOCTOR WATERS SENDS MESSAGE

Upon learning of Doctor Fairchild's death, Dr. H. J. Waters, president of the Kansas State Agricultural college, sent the following telegram to Mrs. Fairchild:

"On behalf of the faculty and alumni of the Kansas State Agricultural college which Dr. E. T. Fairchild served so faithfully as regent, I wish to extend to you our warmest sympathy in this hour of bereavement.

"While I realize that no word at this time can greatly lighten such grief as yours, yet there must be great comfort in the thought that Doctor Fairchild contributed so much to the advancement of the public welfare. The people of Kansas will pay him lasting tribute as one of their most constructive leaders. The educators of the Nation will long remember him gratefully for his distinctive contributions to the cause of the new education."

All state and denominational colleges of Kansas except one have well organized Young Men's Christian associations.

Many of the farmers' associations of Kansas will hold their annual meetings at the agricultural college Farm and Home week—February 5 to 10.

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H. J. WATERS, PRESIDENT Editor-in-Chief
N. A. CRAWFORD Managing Editor
J. D. WALTERS Local Editor
ADA RICE, '95, M. S. '12 Alumni Editor

Except for contributions from officers of the college and members of the faculty, the articles in THE KANSAS INDUSTRIALIST are written by students in the department of industrial journalism. The mechanical work is done by the department of printing. Of these departments Prof. N. A. Crawford is head.

Newspapers and other publications are invited to use the contents of the paper freely without credit.

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WEDNESDAY, JANUARY 24, 1917

AN AMERICAN OCCUPATION

There is probably no other occupation in which the proportion of native born Americans to other people is so great as in farming. A statistician points out that of the 6,361,502 farms in the United States 75 per cent are operated by native white persons; 14.5 per cent by negroes and other non-white persons, mostly of American birth; and only 10.5 per cent by foreign born white persons.

The American has always been known for his inventive talents and for his business ability. The fact that the proportion of native born citizens engaged in farming is so large indicates, therefore, that there will be no diminution in the use of modern agricultural methods and modern business practices in this most important science and business. Farming is an American occupation.

HE LIVED FOR EDUCATION

An epitome of the life of the late Edward Thomson Fairchild, president of the New Hampshire State college, is the last statement made by the college paper concerning him before his death: "His one thought has been the welfare of the college."

Doctor Fairchild's one thought was always the welfare of any institution with the responsibility for which he was charged. In his years as a teacher and superintendent of public schools in Kansas, in his nearly 10 years' service as regent of the Kansas State Agricultural college, in his work as superintendent of public instruction of Kansas, in his term as president of the National Education association, in his final duties as president of the New Hampshire State college, he was constant in his devotion and activity for the highest interests of the schools which he served.

Doctor Fairchild was not a native of Kansas; he was born in Ohio. But he spent 27 years in Kansas, and through them all was loyal, earnest, and effective in bringing to the state the fruits of his keen educational and social judgment. He lived in Kansas a greater portion of his life than in any other place, and the state has been proud to claim him as a true Kansan.

The service performed by Doctor Fairchild to every branch of education—elementary, secondary, and collegiate—will be recognized as greater and greater as time passes. He had a great vision—as all true educators have. He saw that traditional educational methods, valuable as they were, were not the final revelation of the needs of a democratic civilization. He saw education as an orderly procession, moving from the farmhouse, the factory home, the residence of the man of wealth, through the elementary schools, the high schools, the colleges, and always in step with the music of democracy and

industry, its essential co-worker. He saw the duty of the state to give every boy and girl real education. Through his influence many steps were taken in Kansas and elsewhere in the direction of realizing this vision. Through his work in the Kansas and New Hampshire educational systems and his fruitful efforts in the presidency of the National Education association, the ideals for which he stood will have a permanent place in American education. Doctor Fairchild lived for the highest interests of the schools of the United States.

DESERTING THE LAND

Competent agriculturists desert the land and move to town to work at menial occupations by the day or week, under the mistaken belief that they are bettering their condition. The sides of the city are distended with the throngs of country people who have run in to escape from farm life and who are dazzled by the bright lights. In every city great masses of these people are now confronted by a poisoned economic condition wherein their earnings and their savings are not sufficient to guarantee them a wholesome living. Labor is bewildered by the unexpected condition, which is without precedent in the United States, although it has preceded the fall of many great nations in the past, and does not know which way to turn. In this extremity the only course for labor to adopt is to hurry back to the land with all celerity possible and create its own conditions and enjoy an independence and an initiative that can never be achieved in the city.—J. W. Murphy in the Denver Field and Farm.

BETTER BREEDING ANIMALS

The almost unprecedented demand for meat products of all kinds naturally has led to a great demand for breeding animals. Farmers show a willingness to pay long prices for animals for breeding purposes that in normal times would go to the block. Such conditions are likely to result in the sale of many second and third class purebreds, at prices far above their actual worth as breeding stock. At no time should registry alone be accepted as the basis on which to judge the value of breeding animals. It is more profitable to invest the money required to buy a third or fourth rate purebred in a first-class grade if the chance is offered.

Individual excellence is the first requirement of any breeding animal; it is better to sacrifice blood lines and pedigree rather than individual type and conformation, quality and general breeding merit. Both the buyer and the seller make a mistake in a transaction that aims to put an inferior purebred animal in a breeding herd. The buyer makes an error because the use of the "scrub" purebred often lowers the quality, type and market value of the resulting offspring, especially in the good grade herd or flock. This means an actual financial loss, aside from the added initial cost of the animal.

The seller makes the grievous error of selling an animal from his herd for breeding purposes that is bound to prove unsatisfactory and react on his future business. The position of the man who is willing to make such a sale is that of a dealer rather than a breeder; his sole object is to get as much quick money out of his herd as he can, whether or not the live stock industry and the breed in which he is interested are benefited; his is destructive, not constructive breeding. Buyer and seller owe it to themselves and to the live stock industry as a whole to avoid the purchase and sale of cheap, second rate purebreds for breeding purposes.—The Ohio Farmer.

NEWSPAPER MEN IN CONGRESS

The new congress will contain 50 newspaper men. It will be the largest representation the profession of journalism has ever known in the American congress. That body has been given over largely to lawyers or professional politicians. There have been business men in its makeup at every

session—merchants, manufacturers, miners, lumbermen, and ship-owners. The press has had few men in either house, however.

Half a hundred newspaper workers—practical students of practical affairs—in the next congress should be able to make their presence count for much. Of course, they are not all like-minded. Neither are they one of temperament. All, however, must be well informed as to the needs of the nation. It has been their business to know what the people think and feel and do. That knowledge should make its possessors able to accomplish succinct results in

want, he trains himself to planning how best to meet those requirements. He learns to grasp problems quickly and surely, to exercise resourcefulness of mind and heart, to bend every energy to the accomplishment of given public tasks, to reassemble his forces for new endeavor in case failure comes to his efforts. It all is derived primarily from his constant intimacy with the thought of the people.

Half a hundred men of this class will take their places as members of the senate and the house of representatives when the new congress convenes. It will begin a noteworthy

ture of 26 degrees below zero, the coldest weather for many years.

The faculty committee on exhibit for the Columbian exposition is busy with plans for the proper presentation of the work of both college and station.

F. A. Waugh, '91, made his usual visit to college friends in the city, and the college, the first of the week. Mr. Waugh is one of those graduates who appreciate their alma mater.

Professor Walters writes entertainingly on "Industrial Education" in the current number of the *Agora*, the new Kansas magazine published at Salina. Several pictures of the college departments illustrate the article.

John Davis, '90, and K. C. Davis, '91, enjoy the distinction of being two of eight students selected to appear before the faculty of the State Normal school in the exercises preliminary to the state oratorical contest.

THE OLD HOME PAPER

Charles Moreau Harger

It's printed old-fashioned and homely, Bearing name of a small country town;

With an unfeigned sneer at its wrapper queer, The postman, in scorn, throws it down.

But I con every line that it offers; Each item brings something to view, Through the vista of years, through youth's pleasures and fears, And serves their keen touch to renew.

The death of the girl I once courted, The growth of a firm I once jeered, The rise of a friend I love to commend, The fall of a man I revered.

As I dream I drift dreamily backward

To the days when to live was a joy, I think and I pore, till the city's dull roar

Grows faint, and again I'm a boy. Rare perfume of green country byways, Fair music of mowers and bees, And the quaint little town with the streets leading down To the creek and the low-bending trees.

Around me the forms of my comrades, About us earth's glories unfurled, Each heart undefiled, with the faith of a child, Looking forth to a place in the world.

And the papers tell how all have prospered, I follow their lives as they flow, Applauding each gain and regretting each pain

For the sake of the days long ago. Above all the huge city dailies With ponderous utterance wise, This scant page hath power to spread for an hour A fairyland sweet to my eyes!

SUNFLOWERS

A woman without a hospital record has a hard time getting into the conversation nowadays.

It appears that it is better to be on the outside leaking in than to be on the inside leaking out.

Every now and then a young man who is in love complains because we don't capitulate to ukelele music.

About the only thing we can be sure of nowadays is that whatever we buy will cost more than it did last time.

Miss Orphal Fatte, whose rich uncle bought her a pair of white top shoes for Christmas, has had to put on interference boots to keep her feet from looking cross-eyed.

LINES BY LITTLE LUCILLE

My hair has a thousand dyes, And my face has some; But the hope of my future lies In my eyes, my chum.

My heart has a thousand cries, And my soul ain't dumb; But the sighs of my languid eyes, Fetch the b'y's, by gum.

Kansas Peace Proclamation

IN the beginning of the new year, with most of the nations beyond the seas at war, the minds of men everywhere turn to ways and means by which future conflicts may be prevented.

In America, which has profited financially to an incalculable extent by the misfortunes of war-stricken lands, thoughtful men and women are organizing to place in concrete form a plan of world-wide influence which shall have for its object not only the disseminating of peace propaganda, but of still more important significance, a movement to insure its permanence. The League to Enforce Peace presents what seems to be the most practical plan by which this great purpose may be achieved.

Despite the fact that the European war has brought Kansas millions of dollars in excess of any other year, no person at all familiar with his state doubts for a moment that the people of this part of the middle west are emphatically opposed to war. No material advantage can serve to change that opposition in an enlightened state where man values are so high. Kansas never has been slow to take its part in such movements. As a state it has responded promptly and generously in every great crisis. Its people have a world grasp, an intelligent understanding, a quick sympathy, and inflexible determination once they believe in a situation. They may be depended upon always to see their duty and to perform it. They will not be content to stand before the world as onlookers through any fancied geographical isolation or geographical security. They will ignore material considerations in favor of humanitarian impulses such as are certain to move a big-minded, big-hearted people to whom patriotism means something more than powder and shell.

Believing, as I do, that these expressions represent the feelings of Kansas people, I should hold myself guilty of neglecting a mighty opportunity for good if I did not realize the wisdom of designating a time for the calm and deliberate discussion of this tremendous question.

Wherefore, I, Arthur Capper, Governor of the state of Kansas, respectfully and earnestly urge the people to set aside Sunday, January 28, 1917, as "Peace Sunday" in Kansas, and Monday, January 29, as "Peace Day" as well as Kansas Day. Ministers of the Gospel are asked to give special attention in their sermons to the furtherance of peace plans; schools, lodges, farmers' organizations, women's clubs, labor unions and every other form of organization are urged to cooperate energetically to encourage an increased membership in the Kansas branch of the League to Enforce Peace.

In testimony whereof, I have hereunto subscribed my name and caused to be affixed the Great Seal of the State of Kansas. Done at Topeka this first day of January, A. D. 1917.

ARTHUR CAPPER, Governor.

By the Governor:

J. T. BOTKIN, Secretary of State.

sensible legislation at Washington.

One of the weaknesses of the average member of law-making bodies is found in the fact that he is not really in touch with his constituents. He does not live close to them. There is a little coterie of political managers acting in a go-between capacity from him to the public and back to the legislator. What he knows concerning the public desire and the public demand is so much of that desire and that demand as the politicians choose to disclose to him—with the addition of more or less heated statements which come to the congressman's secretary from constituents none too shy to make use of the United States mails. Altogether, however, the statesman's actual knowledge of the public mind is limited.

The newspaper man become a legislator suffers from no such handicap. He has been close to the people every day in the year—his business absolutely requires him to know public sentiment. Knowing what the people

epoch for the press of America. The country as a whole should benefit, too, from the work of this company of alert and thoroughly informed legislators.—St. Joseph Gazette.

A QUARTER CENTURY AGO

Items from The Industrialist of January 23, 1892

The annual exhibition of the Hamilton society will be held on Saturday evening next.

The pond in the city park has furnished good skating almost continuously for two weeks past.

G. E. Hopper, '85, has resigned as superintendent of the Manhattan waterworks, and is succeeded by C. E. Pfuetze, '90.

The horticultural department has completed the manuscript for two bulletins—one on grapes, the other on strawberries.

On Tuesday morning at 7 o'clock the thermometer indicated a tempera-

FARM AND HOME WEEK WILL APPEAL TO YOUNG AND OLD

**STRONGEST PROGRAM IN HISTORY OF EVENT PROMISES TO
DRAW HEAVY ATTENDANCE—SOMETHING GOING
ON ALL THE TIME**

The complete program for Farm and Home week at the Kansas State Agricultural college, February 5 to 10, as announced by E. C. Johnson, director of the extension service, is the strongest in the history of this annual event which brings hundreds of persons to Manhattan—both young and old—and gives them a chance to attend college for a week. The boy or girl of 16 and the man or woman of 60 are equally welcome. An attendance of between 1,600 and 2,000 persons from the farms of the state is expected.

Lectures and demonstrations in agriculture, farm engineering, and home economics will be given throughout the entire week, while such entertainment features as music, readings, get-together meetings, and receptions will serve as a means of relaxation.

Annual meetings of Kansas agricultural and stock breeders' associations will be held in the course of the week. Kansas Crop Improvement association and the Kansas Swine Breeders' association will meet February 6; the Kansas State Dairy association and the Kansas Sheep Breeders' association, February 7; the Kansas Improved Stock Breeders' association, February 8; and the Kansas Horse Breeders' association, February 9.

MANY STRONG SPEAKERS

While demonstrations and lectures will be given each day by members of the various departments of the college and experiment station, many persons from other states will take part on the program. Among these will be W. W. Burr, professor of agronomy, agricultural college, Lincoln, Neb.; H. N. Vinall, forage crop investigations, United States department of agriculture, Washington, D. C.; Dr. Warren H. Wilson of Columbia university, New York City; Dr. Edwin L. Earp, Madison, N. J.; John Clay, Chicago, Ill.; F. R. Marshall, sr., animal husbandman in sheep investigations, United States department of agriculture; John B. Irwin, farmer, breeder, and owner of the world's champion cow, Minneapolis, Minn.; J. M. Evvard, assistant chief in animal husbandry, State college, Ames, Iowa; and Mrs. Louise H. Campbell of the extension service, State college, Ames, Iowa.

Charles E. Lobdell of the Federal Farm Loan board will be present to discuss "The Federal Farm Loan Act and its Application," and Dr. Henry J. Waters, president of the Kansas State Agricultural college, will speak on "The Landlord and His Tenant."

Special conferences for county agents, farm bureau officers, county commissioners, institute officers, and other groups will be held. A Percheron sale will be conducted Friday afternoon, February 9. The State Apple show, the Glenwood Mother-Daughter Canning club exhibit, boys' and girls' exhibits of farm and home products and the exhibition of the Kansas Crop Improvement association will be features of the week. At all the general assemblies and for the evening meetings music will be provided by the college band, the college orchestra, the Apollo club, and members of the department of music.

ARRANGEMENT OF PROGRAMS

The programs for the Farm and Home week are arranged in groups as follows: agriculture, home economics, engineering, boys' and girls' special, cream station operators' and butter makers' state associations, exhibits and contests.

All numbers in each group are arranged by days. The agricultural programs are so planned that each one may get all numbers in two different subjects, such as agronomy and dairying, poultry and animal husbandry. Each one will be much more satisfied with the week's work if he pursues only two subjects. The general assemblies in the auditorium at 11:20 in

the morning, and the evening program, are for all men and women, boys and girls. In the afternoons programs are conducted by the associations which are special guests during the week.

The letters preceding subjects indicate the following: (A), agronomy (crops and soils); (D), dairying; (L), live stock (beef cattle, horses, hogs, and sheep); (H), horticulture; (P), poultry; (V), veterinary science (diseases of animals).

Monday, February 5

- 1:00 Registration (Main Building, Room 34)
- 3:00 Buy Products, Boy Products, and By-products (Old Chapel, Main Building).....M. G. Burton
- 4:00 Kansas Bird Life (Illustrated).....J. E. Ackert

EVENING PROGRAM

- (Auditorium)
- Walter Burr, Director Rural Service Department, Presiding
- 7:30 Music—Selections by the Apollo Club, Prof. A. E. Westbrook, Director, and Piano Selections by Miss Abernethy.
- 8:00 Address—Local Rural Institutes; Their Responsibility to the Community.....Dr. Edwin L. Earp, Madison, N. J.
- Moving Picture Film—Some Community Activities in Kansas.

Tuesday, February 6

- 7:30-8:30 Registration (Main Building, Room 34)
- 8:30-9:30 (A) Pasture Management (Old Chapel, Main Building).....Ralph Kenney
- 8:30-9:30 (H) Clean Nursery Stock (Horticulture).....George Dean
- 8:30-9:50 (A) Cropping Systems for Kansas (Agriculture 63).....R. I. Throckmorton
- (A) Judging Sorghums (Agriculture 63).....G. E. Thompson
- 8:30-9:50 (P) Judging Poultry (Agriculture 39).....Ross M. Sherwood
- 8:30-9:50 (V) Abortion and Sterility in Cattle (Veterinary Amphitheater)—Demonstration and Lecture.....R. R. Dykstra
- 9:30-10:30 (H) Preparation for the Young Orchard (Horticulture).....Albert Dickens
- 9:30-10:30 (A) Cultivation to Conserve Moisture (Old Chapel).....W. W. Burr
- (A) Demonstration of Agronomy, Agricultural College, Lincoln, Neb.
- 9:50-11:20 (D) Judging Demonstration with Cattle (Judging Pavilion, South Wing).....J. B. Fitch
- 9:50-11:20 (L) Judging Demonstration with Swine (Judging Pavilion, North Wing, West End).....R. Gatewood
- 10:30-11:20 (H) Setting and Pruning Young Trees (Horticulture).....F. S. Merrill
- 10:30-11:20 (A) Forage Sorghums (Old Chapel).....H. N. Vinall
- Office of Forage Crops, United States Department of Agriculture
- 11:25-12:30 General Assembly (Auditorium), Edw. C. Johnson, Dean, Division of College Extension, Presiding.
- Music—Vocal Selections.....Professor Westbrook
- Address—The Landlord and His Tenant.....Dr. H. J. Waters, President, Kansas State Agricultural College
- 12:30-2:00 Noon Hour.
- 2:00 The Kansas Crop Improvement Association (Old Chapel).
- 2:00 The Kansas Swine Breeders' Association (Agriculture 6).
- 2:00 Demonstration of Concrete Machinery (Engineering Building, Laboratory E).
- 4:20 Institute Officers' Conference (Old Chapel, Main Building).
- a. Helpful Suggestions to Institute Officers.
- b. The Work of Our Institute—Round Table.

EVENING PROGRAM

- (Auditorium)
- 7:30 Reception in the Gymnasium.
- Wednesday, February 7**
- 7:30-8:30 Registration (Main Building, Room 34)
- 8:30-10:30 (D) Experimental Work with Dairy Cattle (Pavilion, South Wing).....O. E. Reed, J. B. Fitch
- 8:30-9:30 (H) Cultivation and Fertilizers for Fruit Production (Horticulture).....Albert Dickens
- 8:30-9:50 (A) The Improvement of Corn (Agriculture 63).....C. C. Cunningham, S. C. Salmon
- 8:30-9:50 (P) Housing Poultry (Agriculture 39).....T. S. Townsley
- 9:30-10:30 (H) Pruning for Fruit (Horticulture).....F. S. Merrill
- 9:50-11:20 (L) Judging Demonstration with Sheep (Pavilion, North Wing, West End).....A. M. Paterson
- 9:50-11:20 (V) Diseases of the Digestive Tract—Demonstration and Lecture (Veterinary Amphitheater).....J. H. Burt
- 10:30-11:20 (H) Spraying for Quality (Horticulture).....George Greene
- 11:25-12:30 General Assembly (Auditorium), President H. J. Waters, Presiding.
- Music—Violin Solo.....F. A. Korsmeier
- Address—The Federal Farm Loan Act and Its Application.....Hon. Charles E. Lobdell, Member, Federal Farm Loan Board
- 12:30-2:00 Noon Hour.
- 2:00 The Kansas State Dairy Association (Old Chapel).
- 2:00 The Kansas Sheep Breeders' Association (Agriculture 6).
- 2:00 Demonstration in Engineering Building.

EVENING PROGRAM

- (Auditorium)
- Mrs. Mary Pierce Van Zile, Dean, Division of Home Economics, Presiding
- 7:30 Music—Selections by the College Orchestra, R. H. Brown, Director

- 8:00 Address—The Essentials of Success in Home Making.....Mrs. Louise Campbell, Iowa State College, Ames, Iowa

Thursday, February 8

- 7:30-8:30 Registration (Main Building, Room 34)
- 8:30-9:30 (L) The Product of the Grade Herd (Old Chapel, Main Building).....Dan D. Casement, Manhattan, Kan.
- 8:30-9:30 (H) Grading Fruit (Packing House, College Farm).....Albert Dickens
- 8:30-9:50 (A) Grain Grading and Marketing—A Demonstration in Market Grades of Small Grain (Agriculture 63).....L. A. Fitz
- 8:30-9:50 (P) The Feeding of Poultry (Agriculture 39).....N. L. Harris
- 8:30-9:50 (V) The Meat We Eat—Demonstration and Lecture (Veterinary Amphitheater).....F. S. Schoenleber
- 9:30-10:30 (L) The Bovine Family and Its Domesticated Forms—Illustrated (Old Chapel).....R. K. Nabours
- 9:30-10:30 (H) Packing Fruit (Packing House, College Farm).....F. S. Merrill
- 9:50-11:20 (D) The Improvement of the Dairy Herd (Dairy Building).....J. B. Fitch, W. E. Tomson
- 9:50-11:20 (L) Demonstration in Judging Horses (Pavilion, South Wing).....C. W. McCampbell
- 10:30-11:20 (L) Some Problems in Cattle Breeding (Old Chapel).....E. N. Wentworth
- 10:30-11:20 (H) Storing Fruit (Packing House).....Albert Dickens
- 11:25-12:30 General Assembly (Auditorium), W. M. Jardine, Dean, Division of Agriculture, Presiding.
- Music—Selections.....Miss Bess Curry
- Address—From Range to Feed Lot.....Hon. John Clay, Chicago, Ill.
- 12:30-2:00 Noon Hour.
- 2:00 The Kansas Improved Stock Breeders' Association (Old Chapel).
- 2:00 Demonstration in Gas and Traction Engines (Engineering Building).

EVENING PROGRAM

- (Auditorium)
- A. A. Potter, Dean, Division of Engineering, Presiding
- 7:30 Music—Instrumental Selections by Miss Easter, and Selections by the Apollo Club, Prof. A. E. Westbrook, Director.
- 8:00 Painting as a Factor in the Upkeep of Farm Buildings.....H. H. King, Associate Professor of Chemistry, Kansas State Agricultural College
- 8:30 Rural Architecture.....W. A. Eberton, Professor of Rural Architecture, Kansas State Agricultural College

Friday, February 9

- 7:30-8:30 Registration (Main Building, Room 34)
- 8:30-9:30 (L) Address of the President of the Kansas Horse Breeders' Association.....Hon. George B. Ross, Sterling, Kan.
- 8:30-9:30 (H) The Front Yard Garden (Horticulture).....M. F. Ahearn
- 8:30-9:50 (A) A Demonstration of the Life Histories of Field-crop Insects (Agriculture 63).....Geo. A. Dean, J. W. McCulloch
- 8:30-9:50 (D) Dairy Judging—Lecture and Demonstration with Four Principal Dairy Breeds (Judging Pavilion, South Wing).....A. S. Neale, W. E. Tomson
- 8:30-9:50 (P) The Marketing of Poultry Products (Agriculture 39).....F. E. Fox
- 8:30-9:50 (V) Post Mortem Demonstration (Veterinary Amphitheater).....L. W. Goss, J. H. Burt
- 9:30-10:30 (L) Horse Production a Profitable Side Line on the General Farm.
- 9:30-10:30 (H) Getting Ready for the Garden (Horticulture).....Albert Dickens
- 9:50-11:20 (D) The Selection of the Herd Sire (Dairy Building).....O. E. Reed
- 9:50-11:20 (L) Judging Demonstration with Beef Cattle (Live Stock Pavilion, South Wing).....C. M. Vestal, David Gray
- 10:30-11:20 (L) Essentials to Success in Standing a Stallion for Public Service.....Frank B. Graham, Kansas City
- (L) The Need of Community Effort in Horse Production.....W. A. Cochel
- 10:30-11:20 (H) Truck Crops in a Big Way (Horticulture).....F. S. Merrill
- 11:25-12:30 General Assembly (Auditorium), J. T. Willard, Dean, Division of General Science, Presiding.
- Music—Vocal Selections.....Elton Calkins
- Address—The Economics of Rural Social Development.....Dr. Warren H. Wilson, New York
- 12:30-2:00 Noon Hour.
- 2:00-4:20 Kansas Horse Breeders' Association and Percheron Sale (Judging Pavilion).
- 2:00-4:20 Demonstrations with Traction Engines and Farm Machinery (Engineering Buildings).
- 2:00-4:00 Farm Bureau Conference. Bureau Officers and County Commissioners Especially Invited (Old Chapel).
- a. The Farm Bureau Organization.
- b. The Farm Bureau Program.
- c. The Farm Bureau Law.

EVENING PROGRAM

- (Auditorium)
- 7:30-9:00 Concert—Instrumental Selections by Miss Easter; a Group of Songs by Miss Mae Carley; Readings; and Band Concert Program. By Department of Music, Prof. A. E. Westbrook, in Charge.
- HOME ECONOMICS PROGRAM**
- For Women and Girls
- Dean Mary Pierce Van Zile, in Charge
- (All sessions in the Domestic Science and Art Building, except as otherwise indicated).
- The Home Economics Program for the week presents many of the vital questions of the home. The discussions will include the following subjects:
- The Ideals of the Home.
- The Principles of Business Efficiency as Applied to the Home.
- The Home as Providing Food and Clothing for the Family.
- The Home as Providing a Place of Shelter, Safety, and Beauty for the Family.
- The Home as a Social and Civic Factor.

Tuesday, February 6

- 8:30-10:00 Registration (Main Building, Room 35)
- 10:00-11:20 Organizations and Greetings.
- The Business of Being a Home-maker.....Mrs. Van Zile
- The Ideals of the Home.....Miss Brown
- 11:25-12:30 General Assembly (Auditorium).
- 2:00-4:30 The Principles of Business Efficiency as Applied to the Home—Standardized Household Operations.....Miss Bartholomew
- Scheduling of Household Tasks.....Miss Broughten
- What the Government and State Are Doing to Help the House-keeper.....Miss McClurg
- Desirability of a System of Keeping Reliable Household Records.....Miss Perry
- Laundry Hints and Helps.....Miss Mather

Wednesday, February 7

- 8:00-9:00 Registration (Main Building, Room 35)
- 9:00-11:25 The Home as Providing Food for the Family—The Principles of Human Nutrition.....Dean J. T. Willard
- Discussion by.....Pres. H. J. Waters
- The War and the Food Question.....Miss Haggart
- Diet for Children.....Miss Sheets
- The Housewife as a Purchasing Agent.....Miss Treat
- Uses of Paper in the Home.....Miss Caldwell
- 11:25-12:30 General Assembly (Auditorium).
- 2:00-4:30 The Home as Providing Clothing for the Family—A Woman and Her Clothing.....Mrs. Birdsall
- Clothing for the Children.....Miss Sequist
- My Greatest Aid in Sewing.....Miss Wright
- The Development of Judgment in Buying of Clothing Materials.....Miss Fecht
- The Place of Domestic Art in a Girl's Education.....Miss Jones
- 7:30 Women's Evening (Auditorium).
- Address—The Essentials of Success in Home Making.....Mrs. Louise Campbell, Iowa State College

Thursday, February 8

- 8:00-9:00 Registration (Main Building, Room 35)
- 9:00 Address—Child Life in Relation to Community Life.....Mrs. Campbell, Iowa State College
- 10:00 The House of Moderate Cost.....Prof. W. A. Eberton
- 11:25 General Assembly (Auditorium).
- 2:00-2:30 Address—The Glenwood Canning Club (Auditorium).....Mrs. J. M. Timmons, President of the Club, Bonner Springs, Kan.
- 2:30-4:00 Canning Demonstration by two Mother-Daughter Teams from the Glenwood Club.
- Friday, February 9**
- 9:00-11:25 The Home as Providing a Place of Shelter, Safety, and Beauty for the Family—Sanitation as Applied to Living Conditions.....Miss Poulter
- The Home Nurse.....Miss Kennedy
- Principles of Color and Design Applied to Clothing and House Furnishings.....Miss Holman
- 11:25-12:30 General Assembly (Auditorium).
- 2:00-4:30 The Home as a Social and Civic Factor—The Home as a Social Center.....Warren H. Wilson
- Woman's Responsibility Toward Civic Affairs.....Mrs. C. A. Kimball, Manhattan, Kan.
- Training the Child for Citizenship.....Mrs. Lee Monroe, Topeka, Kan.
- How Far is Home Responsible for the School.....Supt. E. B. Gift, Manhattan, Kan.
- 7:30 Concert in Auditorium.

ENGINEERING PROGRAM

A. A. Potter, Dean Division of Engineering, in Charge

Tuesday, February 6

FORENOON SESSION

- (Engineering Amphitheater, Room E 33)
- 8:30 Uses for Concrete on the Farm.....Mr. J. B. Marcellus, Engineer, Portland Cement Association
- 9:10 Materials and Methods for Concrete Construction.....R. A. Seaton
- 10:00 Farm Uses of Electricity, C. E. Reed
- 11:20 General Assembly (Auditorium).

AFTERNOON SESSION

- (Strength of Materials Laboratory, E 7)
- 2:00 Demonstrations by Instructors of the Department of Applied Mechanics on Concrete Machinery, such as concrete mixers, block machines, post molds, and the like. Concrete beams and cylinders will be loaded to destruction to show the effect of different materials and methods of construction.

Wednesday, February 7

FORENOON SESSION

- (Engineering Amphitheater, Room E 33)
- 8:30 Water Supply to the Farmhouse.....Dr. J. D. Walters
- 9:30 Sewage Disposal for Country Homes.....F. F. Frazier
- 10:10 Tile Drainage in Kansas.....H. B. Walker
- 11:20 General Assembly (Auditorium).

AFTERNOON SESSION

- (Shop Amphitheater, Room S 29)
- 2:00 Iron and Steel; Their Manufacture and Use.....W. W. Carlson
- 3:00 Demonstrations of Oxyacetylene Welding and of Hardening and Tempering of Tool Steel, D. E. Lynch
- 3:30 Demonstrations of Molding and of the Casting of Iron.....E. Grant

Thursday, February 8

FORENOON SESSION

- (Engineering Amphitheater, Room E 33)
- 8:30 The Stationary Gas Engine for the Farm.....W. G. Knickerbocker
- 9:20 The Care and Home Repair of Automobiles.....E. V. Collins

- 10:10 Carburetors and Ignition Apparatus.....A. C. Bennett, Bennett-Wilcox Carburetor Company, of Minneapolis, Minn.
-Mr. John Krisl, Webster-Electric Company, Racine, Wis.

11:20 General Assembly (Auditorium).

AFTERNOON SESSION

- (Gas Engine Laboratory, E 6, and Traction Building.)
- 2:00 Demonstrations on Gas Engines and Traction Engines by instructors of the Department of Steam and Gas Engineering, and Representatives of Manufacturers.

Friday, February 9

FORENOON SESSION

- (Engineering Amphitheater, Room E 33)
- 8:30 The Gas Tractor: Its Care and Operation.....W. H. Sanders
- 9:20 Selection and Care of Farm Machinery.....F. A. Wirt
- 10:10 The Relation of the Gas Tractor to Other Farm Machinery.....W. A. Buck
- 11:20 General Assembly (Auditorium).

AFTERNOON SESSION

- (Traction Building and Farm Machinery Building)
- 2:00 Demonstration on Traction Engines and Farm Machinery by instructors of the departments of Steam and Gas Engineering and of Farm Machinery, and Representatives of Manufacturers.

BOYS AND GIRLS' SPECIAL PROGRAM

This program will be in charge of Otis E. Hall, State Club Leader. All boys and girls will want to attend it regularly and take part in all contests, plays, and games. Except as otherwise indicated the afternoon programs will be conducted in the Auditorium.

Tuesday, February 6

- 8:30-9:50 Judging Demonstrations with Hogs, and a Study of the Principal Breeds of Hogs (Judging Pavilion, North Wing, East End).....Ray Gatewood
- 9:50-11:20 A Contest in Judging Hogs (Judging Pavilion, North Wing, East End). Conducted by Carl P. Thompson. All boys and girls to take part.
- 11:25 General Assembly (Auditorium).
- 12:30-2:00 Noon Hour.
- 2:00 Welcome Address, Edw. C. Johnson, Dean, Division of Extension.
- 2:10 Address and Announcements of Plans for the Week.....Mr. Hall
- 2:50 Some Special Things to Know About Gardening.....Albert Dickens, Professor of Horticulture
- 3:50 Plays and Games at the Gymnasium, under the direction of the Physical Training Department of the College.

Wednesday, February 7

- 8:30-9:50 Judging Demonstration with Horses and a Study of the Principal Breeds of Horses (Judging Pavilion, North Wing, East End).....C. W. McCampbell
- 9:50-11:20 A Contest in Judging Horses—all boys and girls to take part (Judging Pavilion, North Wing, East End). Conducted by C. W. McCampbell.
- 11:25-12:30 General Assembly (Auditorium).
- 12:30-2:00 Noon Hour.
- 2:00 Contests in Sewing and Rope-pulling.
- 3:00 Special Lessons on Trees and Landscape Gardening, M. F. Ahearn, Professor of Landscape Gardening.....C. A. Scott, State Forester
- 3:50 Plays and Games at the Gymnasium, under the direction of the Physical Training Department of the College.

Thursday, February 8

- 8:30-9:50 A Comparison of Beef and Dairy Cattle and How to Judge Them (Pavilion, North Wing).....Carl P. Thompson
-De. H. Branson
- 9:50-11:20 A Contest in Judging Beef and Dairy Cattle—for all boys and girls (Pavilion, North Wing). Conducted by Mr. Thompson and Mr. Branson.
- 11:25-12:30 General Assembly (Auditorium).
- 12:30-2:00 Noon Hour.
- 2:00-2:30 Address: The Glenwood Canning Club.....Mrs. J. M. Timmons, President of the Club, Bonner Springs, Kan.
- 2:30-4:00 Canning Demonstration by Two Mother-Daughter Teams from the Glenwood Club.
- 4:00 Grand Live Stock Parade of Beef and Dairy Cattle, Horses, Hogs, and Sheep. (Judging Pavilion.)

Friday, February 9

- 8:30-9:30 How to Judge Corn and Sorghums and a Study of Varieties (Agriculture 78, Crop-judging Laboratory).....R. K. Bonnett
-G. E. Thompson
- 9:50-11:20 A Contest in Judging Corn and Sorghums—for all boys and girls. Conducted by R. K. Bonnett and G. E. Thompson.
- 11:25-12:30 General Assembly (Auditorium).
- 12:30-2:00 Noon Hour.
- 2:00 Contest in Judging Cotton Fabrics, Apples, and Potatoes.
- 3:00 The "Red Letter" period for the whole week for the boys and girls in attendance. Don't ask what will be "on," just stay and see.

CREAM STATION OPERATORS' TESTING COURSE, AND BUTTER MAKERS' CREAM-GRADING COURSE

George S. Hine, State Dairy Commissioner, in Charge

(All sessions, except when otherwise indicated, will be held in the Dairy Building.)

Tuesday, February 6

- 8:30 Purchasing Milk and Cream on a Butter Fat Content Basis.....N. E. Olson
- 9:20 Milk Testing (Laboratory).
- 11:20 General Assembly (Auditorium).
- 1:30 Milk Testing (Laboratory) for Station Operators.
- Cream Grading (Laboratory) for Butter Makers.
- (Concluded on Page Four)

AMONG THE ALUMNI

Miss Lorena B. Taylor, '14, is teaching in an academy in Cedarville, Ohio.

Lieutenant L. B. Bender, '04, is stationed at Fort Worden, Port Townsend, Wash.

Miss Florence N. Peppiatt, '16, is teaching science and history in the Milton (N. D.) high school.

J. L. Jacobson, '15, is teaching agriculture, botany, and elementary science in the Salina high school.

Herbert S. Coith, '15, is teaching and studying in the Ohio State university. He received his master's degree in chemistry from that institution last year.

Walter E. Deal, '16, and D. C. Tate, '16, have been transferred to the engineering laboratories of the General Electric company in New York City and are living at 223 West Eleventh street.

Mrs. Hope (Brady) Anderson, '98, of Houghton, Mich., was called to Manhattan on account of the serious illness and death of her mother, Mrs. Susan V. Brady, who passed away on January 11.

C. P. Hartley, '92, physiologist of the bureau of plant industry, department of agriculture, Washington, D. C., is author of farmers' bulletin 773, "Corn Growing under Drouthy Conditions," just published.

R. C. Baird, '11, is visiting the college. Since his graduation Mr. Baird has been continuously in civil engineering work. During the past few years he has been with the Rock Island on track elevation work in Chicago.

Miss Gertrude Miller, '11, writes: "I watch eagerly for THE INDUSTRIALIST each week. It is almost like getting a letter from home." Since her graduation Miss Miller has been assistant cashier of the State bank at Langdon.

Wellington T. Brink, '16, has resigned his position on the Topeka State Journal to become a reporter on the Cleveland (Ohio) News at a 50 per cent increase in salary. His mother, Mrs. C. M. Brink, will also make her home in Cleveland.

Miss Elizabeth Dempewolf, '15, writes from Lordsburg, N. M., that she gladly remits her alumni dues for she gets more than a dollar's worth of pleasure out of THE INDUSTRIALIST. She is teaching domestic science and art in both the high school and the grades.

L. M. Peairs, '05, professor in West Virginia university, is one of the authors of "A Practical Entomology for Schools," which is among the forthcoming books announced by John Wiley and Sons. The work is intended for secondary schools and short courses in colleges.

Charles W. Shaver, '15, is in architectural practice at Salina. In the past year he furnished plans and supervision for a power plant, six churches, and several schoolhouses and residences. He is now preparing plans for three churches, a lodge building, and two residences.

O. M. Kiser, '08, has resigned his position as director of agriculture in the Hector (Minn.) high school to become extension director of the Northwest Agricultural school and station of the University of Minnesota. This school, situated at Crookston, aims to serve the needs of the Red river valley.

Henry Thomas, '04, of Chester, Pa., writes: "I have been exceedingly busy for the past year, much of the time with the Sun Shipbuilding company, one of the largest and most modern shipbuilding plants on the Delaware. I have been in charge of the Electrical as well as other engineering work. I am also still with the Sun company of Philadelphia, with which I have been connected for several years.

H. Clay Lint, '11, has completed his studies in Rutgers college and has received the degree of doctor of philos-

ophy. He has opened a laboratory in agricultural bacteriology at 17 Battery place, New York City, and is in charge of some experimental work and the production of a bacterial culture for legume inoculation. This work is carried on for the Alphano Humus company, New York.

Miss Alma G. Halbower, '14, who is studying in Columbia university, New York, writes: "I am very glad indeed to note the increasing strength of the Alumni association and trust that each alumnus will feel the importance of 'doing his bit' to maintain an association of which we may all be proud. We enjoy reading THE INDUSTRIALIST very much and always look first at the alumni notes."

The civil engineering department is in receipt of a letter from Charley H. Blake, '13, in which he states that during the past two years he has re-surveyed about 130 sections of land located in seven different townships, dividing each section into 16 legal subdivisions, and taking rough topography of each of the subdivisions. He is now preparing to move to another allotment of 80 additional sections which he hopes to complete by September of this year.

Prof. George A. Dean, '95, and Mrs. Minerva (Blachly) Dean, '00, have returned from a trip east. Mr. Dean attended the meeting of the Association of Economic Entomologists of North America in New York and took part in the program. Mrs. Dean went to Boston, where she visited her sister, Mrs. Adele Freeman, '01. On their way home, Mr. and Mrs. Dean went to Washington, D. C., where they visited Mr. and Mrs. R. W. Clothier, '97. Mrs. Corinne (Failyer) Kyle, '03, and Miss Lois Failyer, '07, were guests of the Clothiers at a party in honor of Professor and Mrs. Dean.

MARRIAGES

FARQUHARSON-HOWER

Miss Luella M. Farquharson and Mr. G. H. Hower, '12, were married in Lincoln, Kan., December 27. Mr. Hower is superintendent of public instruction in Lincoln county.

BIRTHS

Born, to Mr. J. F. Shriver and Mrs. Lizzie (Alexander) Shriver, '07, Spokane, Wash., on January 20, a daughter, Hester Elizabeth.

Born, to Mr. H. D. O'Brien, '11, and Mrs. O'Brien, 6107 St. Lawrence avenue, Chicago, Ill., on November 12, a son, Harold Dale.

LETTER FROM CONNECTICUT

To THE INDUSTRIALIST:

It is with great pleasure that I contribute my annual fee as an alumnus of the greatest agricultural college in the world. I write this in unbiased conclusions. Where can you find spirit, "pep," individuality, progress, whole hearted friendship and such high standards of preparation for home building as at K. S. A. C.?

In our mad rush for the top round in the ladder of success, we often overlook the builder of the ladder. Sometimes I think if I could just repeat my work at K. S. A. C. and enjoy it as I did before, it would be an ideal climax to any life.

K. S. A. C. has but one on the faculty at Storrs, but two of us on the hill, the other being Madge Rowley Musser. "THE INDUSTRIALIST" is read with great interest, an overworked saying, but no alumnus can leave K. S. A. C. and not appreciate the stream of sound counsel carried by it. With our Alma Mater as the heart and United States mail as the arteries, THE INDUSTRIALIST is but the blood laden with nutriment for thought, news, and progress.

KARL B. MUSSER, '12.
Storrs, Conn.

OREGON ALUMNI MEET

Oregon alumni and former students of the Kansas State Agricultural college held their annual gathering at the Hotel Campbell, Portland, Ore., Saturday evening, December 30, as the guests of Mrs. R. J. Brock. An elaborate dinner was served, after which a musical program was given, compris-

ing several selections by the Kansas Aggie male quartet composed of Messrs. E. P. Smith, W. W. Lawton, James West, and C. H. Anderson; a baritone solo by Mr. Allen Tindolph; a violin solo by Mr. C. A. Haulenbeck, a tenor solo by Mr. C. H. Anderson. Mrs. Bracons was the accompanist. After singing "Alma Mater," the company gave the college yell twice in regular old "pep" meeting style.

Then followed a short business meeting presided over by Mr. W. W. Lawton, the president for the past year. It was decided to meet semiannually, having a picnic or some sort of meeting in June as well as the annual mid-winter gathering. The following were elected officers for the coming year: Mrs. E. C. Joss, president; Mr. E. C. Thayer, vice-president; Mr. A. E. Lawson, secretary.

The rest of the evening was spent in visiting and living over the college days. The evening was most highly enjoyed by all.

Those present were: Mr. and Mrs. E. C. Joss; Mr. and Mrs. E. P. Smith; Mr. and Mrs. W. W. Lawton; Mr. and Mrs. H. W. Stone; Mr. and Mrs. Edwin Beckwith; Mr. and Mrs. C. A. Haulenbeck; Mr. and Mrs. H. A. Darnell; Mr. and Mrs. H. R. Blair; Mr. and Mrs. E. C. Faville; Mrs. Robert J. Brock; Mrs. Bracons; Mrs. Elmer Waldele; Miss Waldele; Miss Muriel Smith; Miss Marie Williams; Mr. W. A. Young; Mr. George A. Moffatt; Mr. James West; Mr. E. C. Thayer; Dr. Frank E. Smith; Mr. C. H. Anderson; Mr. Allen Tindolph; Mr. A. E. Lawson.

TO REDUCE BEEF COST

(Concluded from Page One)

the past, when the cost of production was disregarded, the cattle industry was one in which speculation had a large part. In the future, the investment will be considered to the exclusion, for the most part, of huge profits and similar losses.

LOOK AT OTHER SIDE

"Agricultural colleges, agricultural journals, and other sources of information have been teaching that live stock should have a large place in the farming sections of the United States because feeding live stock is essential to the maintenance of soil fertility.

"It is time that the cattlemen began to look at the other side of the story and to realize that good farming is the basis upon which profitable live stock breeding and feeding industries will be based in the future. We can no longer afford to depend entirely upon the grass which nature has so abundantly provided but must of necessity supplement our ranges and pastures with feeds cheaply produced which will prevent loss during the winter or in the summer when climatic conditions are unfavorable.

NEEDS FOR FUTURE SUCCESS

"The most successful cattleman of the future will be he who studies and works out means and methods of increasing the carrying capacity of his grass lands, grows crops which will yield the largest amount of food nutrients per acre, harvests and stores his feed in such manner as to preserve its feeding value, and supplements it with such concentrates as will increase its efficiency.

"In addition to this ability as a farmer and feeder, he will possess a sufficient amount of knowledge of live stock to select the type of cattle which will most economically turn the products of the soil into meat and at the same time be desirable either to the feeder because of their ability to finish into desirable market animals, or to the packer because of their ability to yield attractive carcasses. Another factor which will contribute to success is a study of market conditions so that his product may be cashed when most in demand."

Investigations by the United States forest products laboratory, at Madison, Wis., have resulted in the use of spent tanbark in the manufacture of asphalt shingles to the extent of 160 tons per week. The value of the bark has been thereby increased from 60 cents to \$2.50 per ton.

NO PLACE FOR SCRUBS

OLD DOBBIN IS NO LONGER POPULAR ON KANSAS FARMS

Rapid Advancements Being Made in Horse Breeding Industry, According to Report of Secretary of State Live Stock Registry Board

That rapid strides have been made in the improvement of Kansas horses is indicated by the annual report of the secretary of the state live stock registry board, Dr. C. W. McCampbell.

In 1910 when the Kansas stallion law became effective 2,599 purebreds and 3,766 grades and scrubs were licensed to stand for public service, according to the report, while during 1916 licenses were issued for 3,160 purebreds and 2,130 grades and scrubs. This means that 43 per cent fewer grades and scrubs, and 21.5 more purebreds were licensed in 1916 than in 1910.

An increase of 40 per cent in the number of purebred draft stallions is shown, while there has been a 30 per cent decrease in the number of purebred draft stallions. Purebred Percheron stallions have increased 54 per cent. They represent 65 per cent of all the purebred stallions registered. No scrubs are now advertised as purebreds.

RICE COUNTY HEADS LIST

Rice county leads in the number of purebred stallions registered in 1916, 80 per cent of its 70 stallions standing for public service being in this class.

Other counties having 50 or more stallions in which a comparatively high per cent of purebred stallions were licensed to stand for public service rank as follows: Mitchell, 74 stallions, 78 per cent; Cowley, 92 stallions, 75 per cent; McPherson, 86 stallions, 72 per cent; Reno, 95 stallions, 71 per cent; Sedgwick, 83 stallions, 71 per cent; Pawnee, 54 stallions, 71 per cent; Clay, 60 stallions, 70 per cent; Butler, 90 stallions, 69 per cent; Jewell, 97 stallions, 68 per cent.

Counties having 50 or more stallions in which the smallest per cent of purebred stallions were licensed rank in the following order: Wilson, 51 stallions, 41 per cent; Cherokee, 74 stallions, 43 per cent; Neosho, 61 stallions, 45 per cent; Bourbon, 73 stallions, 45 per cent; Marshall, 92 stallions, 45 per cent; Rush, 51 stallions, 46 per cent; Brown, 56 stallions, 46 per cent; Linn, 58 stallions, 46 per cent; Labette, 80 stallions, 49 per cent; Greenwood, 75 stallions, 50 per cent.

FARM AND HOME WEEK

(Concluded from Page Three)

Wednesday, February 7

- 8:30 Causes of Variation in Cream Tests.....N. E. Olson
- 9:20 Cream Testing (Laboratory).
- 11:20 General Assembly (Auditorium).
- 2:00 Profitable Methods of Marketing Butter Fat (Old Chapel, Main Building).....Theodore Macklin
- 2:40 The Breeding of Dairy Cattle.....Charles L. Hill
Farmer and Breeder,
Rosendale, Wis.
- 3:20 Suggestions for Control of Diseases in Dairy Cattle.....L. W. Goss

Thursday, February 8

- 8:00 What Grading Has Accomplished in Kansas.....George S. Hine
- 9:20 Demonstration and Practice in Composite Testing (Laboratory).
- 11:20 General Assembly (Auditorium).
- 1:30 Cream Testing (Laboratory) for Station Operators.
- 2:00 Cream Grading (Laboratory) for Butter Makers.
- 4:30 Live Stock Parade (Judging Pavilion).
- Friday, February 9
- 8:30 Dairy Judging—Lecture and Demonstration with the Four Principal Dairy Breeds (Judging Pavilion, South Wing).....A. S. Neale, W. E. Tomson
- 9:50 Testing Cream With and Without Use of Glymol.....N. E. Olson
- 10:40 Equipment Necessary in a Cream Station.....George S. Hine
- 11:20 General Assembly (Auditorium).
- 1:30 Examination (Dairy Building) for Station Operators.
- 1:30 Cream Grading (Laboratory) for Butter Makers.
- 3:30 Inspection of Dairy Cattle and Dairy Barn Equipment (Dairy Barn).

THE KANSAS SWINE BREEDERS' ASSOCIATION

Tuesday Afternoon, February 6 (Agriculture 6)

- 2:00 The Business of Selling Purebred Swine.....F. B. Caldwell
Howard, Kan.

- 2:30 Importance of Family Lines in Breeding Swine.....J. H. Skinner
Dean of Agricultural College,
Purdue University, Lafayette, Ind.
- 3:20 Inheritance of Size of Litter in Swine.....Prof. E. N. Wentworth
Kansas State Agricultural College
- 4:00 Business Session

KANSAS CROP IMPROVEMENT ASSOCIATION

Tuesday, February 6
(Old Chapel, Main Building)

- 8:30-9:20 Pasture Management.....Ralph Kenney
Assistant Professor of Crops,
Kansas State Agricultural College
- 9:30-10:30 Cultivation to Conserve Moisture.....W. W. Burr
Professor of Agronomy, Nebraska
Agricultural College, Lincoln, Nebr.
- 10:30-11:20 Forage Sorghums.....H. N. Vinal
Office of Forage Crops, United
States Department of Agriculture,
Washington, D. C.
- 11:25 General Assembly.
- 2:00 President's Address.
- 2:10 Factors Influencing Yield of Wheat.....L. E. Call
Professor of Agronomy,
Kansas State Agricultural College
- 2:50 Sudan Grass.....Mr. Vinal
- 3:30 Most Profitable Crops.....W. W. Burr
- 4:20 Business Session.

THE KANSAS STATE DAIRY ASSOCIATION

Wednesday, February 7

- 8:30 President's Address.
- 9:00 Experimental Work with Dairy Cattle (Live Stock Pavilion, South Wing).....O. E. Reed
Professor of Dairy Husbandry,
Kansas State Agricultural College
-J. B. Fitch
Asso. Professor of Dairy Husbandry
- 10:50 Business Session.
- 11:25 General Assembly (Auditorium).
- AFTERNOON SESSION
(Old Chapel, Main Building)
- 2:00 Profitable Methods of Marketing Butter Fat.....Theodore Macklin
Instructor in Agricultural Economics,
Kansas State Agricultural College
- 2:40 The Breeding of Holstein Cattle.....John Irwin
Minneapolis, Minn.
(Farmer and Breeder, and Owner of
the World Champion Holstein Cow.)
- 3:20 Suggestions for Control of Diseases of Dairy Cattle.....L. W. Goss
Professor of Veterinary Medicine,
Kansas State Agricultural College

KANSAS SHEEP BREEDERS' ASSOCIATION

Wednesday Afternoon, February 7
(Agriculture 6)

- 2:00 Handling Western Lambs.....J. B. Baker
Emporia, Kan.
- 2:40 Sheep Feeding Experiments.....Prof. W. A. Cochel
Kansas State Agricultural College
- 3:20 Sheep Breeding.....F. R. Marshall
In Charge of Sheep Investigations,
United States Department of
Agriculture
- 4:20 Business Session.

THE KANSAS IMPROVED STOCK BREEDERS' ASSOCIATION

Thursday, February 8
(Old Chapel)

- 8:30 The Product of the Grade Herd.....Dan D. Casement
Farmer and Stockman,
Manhattan, Kan.
- 9:30 The Bovine Family and Its Domesticated Forms (Illustrated).....R. K. Nabours
Professor of Zoology,
Kansas State Agricultural College
- 10:30 Some Problems in Cattle Breeding.....E. N. Wentworth
Professor of Animal Breeding,
Kansas State Agricultural College
- 11:20 General Assembly (Auditorium).
- 1:30 Business Meeting (Old Chapel).
- 2:00 The Breeding of the Grand Champion (Old Chapel).....R. H. Hazlett
Farmer and Breeder,
Eldorado, Kan.
- 2:20 The Outlook for the Live Stock Breeder (Old Chapel).....Hon. John Clay
Chicago, Ill.
- 3:00 The Breeding of Purebred Cattle (Illustrated by examples from the College breeding herd) (Judging Pavilion).....W. A. Cochel
Professor of Animal Husbandry,
Kansas State Agricultural College
- 4:00 Grand Live Stock Parade of Breeding and Show Animals of Beef and Dairy Cattle, Horses, Hogs, and Sheep (Judging Pavilion).

KANSAS HORSE BREEDERS' ASSOCIATION

Friday, February 9

- FORENOON SESSION
- 8:30 President's Address.....Geo. B. Ross
Sterling, Kan.
- Report of Secretary.
- Appointment of Committees.
- 9:30 Horse Production a Profitable Side Line on the General Farm.
- 10:30 Essentials to Success in Standing a Stallion for Public Service.....Frank B. Graham
Kansas City
- The Need of Community Effort in Horse Production.....Prof. W. A. Cochel
Kansas State Agricultural College
- 11:20 General Assembly (Auditorium).
- The Economics of Rural Social Development.....Dr. Warren H. Wilson
New York
- AFTERNOON SESSION
(Judging Pavilion)
- 2:00 Kansas Percheron Breeders' Sale (Forty Percheron Mares and Stallions to be sold.)
- EVENING SESSION
(Old Chapel)
- 7:00 General Discussions.
Reports of Committees.
Election of Officers.

THE KANSAS INDUSTRIALIST

Volume 43

Kansas State Agricultural College, Manhattan, Wednesday, January 31, 1917

Number 16

CROWD MAY REACH 2,000

BIG ATTENDANCE IS EXPECTED AT FARM AND HOME WEEK

Quality of Program Proves Attractive to Men, Women, and Youths—Ample Facilities for All to Obtain Satisfactory Room and Board

Between 1,500 and 2,000 men, women, boys, and girls from the farms of Kansas are expected at the Farm and Home week of the Kansas State Agricultural college February 5 to 10. Letters received by Edward C. Johnson, dean of extension, indicate that the attendance will break all previous records. The high quality and varied character of the program are proving especially attractive.

JOHNSON GIVES ASSURANCE

There will be ample facilities for room and board for all who come. The town has been carefully canvassed, Dean Johnson announces, and however large the attendance may be no one will have difficulty in obtaining satisfactory accommodations. Arrangements have been made with one of the churches to furnish dinners and suppers for the overflow from regular boarding houses and restaurants.

LIVE STOCK EDITOR TO SPEAK

F. D. Tomson, editor of the Short-horn in America and one of the best known live stock men in the country, will be one of the speakers on the program of the Kansas Improved Stock Breeders' association at its annual meeting at the Kansas State Agricultural college, Thursday, February 8. Mr. Tomson will talk on, "Some Suggestions for Shorthorn Breeders."

IF CONCRETE FREEZES IT WILL REMAIN WEAK

Should Be Protected by Sand or Straw—No Danger After Material Has Set

That concrete which freezes before it sets does not attain to maximum strength, was demonstrated recently by a series of experiments conducted by W. B. Wendt, assistant professor of applied mechanics in the Kansas State Agricultural college.

It was found that a concrete cylinder, subjected to freezing as soon as it was poured, only withstood a pressure of 1,195 pounds to the square inch, while another cylinder of the same dimensions, subjected to freezing after it had set for 24 hours, withstood a pressure of 2,469 pounds to the square inch.

"Concrete does not undergo any chemical change after it is set," said Professor Wendt, "nor will low temperature—that is temperature above the freezing point—have any appreciable effect on the strength of concrete."

"When concrete structures are built in the winter months they should be protected with straw, sand, or any material which will prevent freezing. If the concrete is poured during freezing weather the materials should be heated. A large pot or boiler may be used for this purpose. The sand and cement as well as the water should be heated before they are mixed together."

ATCHISON COUNTY BOY WINS IN PIG CONTEST

Walter Earl Delfelder Takes First Honors—200 Entries Make Things Interesting for Young Contestants

Walter Earl Delfelder of Atchison county won first place in the third annual Kansas pig club contest, his Poland-China pig tipping the scales at 355 pounds, having gained an average of 2.68 pounds a day at a cost of 5.6 cents a pound.

Other prize winners in the contest were Melvin Jung of Rice county,

George Harold Delfelder of Atchison county, John W. Reed of Rice county, and Orville Caldwell of Lyon county. The pigs in each case were Duroc-Jerseys with the exception of that of George Delfelder which was a Poland-China.

There were 200 entries in the contest and competition was keen. All winning pigs were purebreds, no grade animal making a score of more than 77. The score of the winner was 92.

This contest is promoted by the Kansas State Agricultural college and the United States department of agriculture. It is under the direct supervision of Otis E. Hall, state director boys' and girls' club work.

VICTORY OVER UNIVERSITY IS LOOKED FOR THIS WEEK

College Team Has Won Three and Lost Two Basketball Games so Far

The Kansas State Agricultural college basketball five has won three and lost two games this season—it dropped two in Lawrence to the University of Kansas quintet.

Washburn was fairly smothered twice—71 to 5 and 49 to 16. One game was played in Manhattan and the other in Topeka. K. S. A. C. romped over the Bethany team in Nichols gymnasium to the tune of 75 to 11. The Aggies are looking for a reversal of form in the K. U. series Friday and Saturday nights in the college gymnasium.

TOO MUCH EXPENSE IN MANY TREE PROTECTION METHODS

Poison or Wire Screening Tends to Guard Against Rabbits

Cornstalks, grasses, tar paper, and other materials are used in wrapping fruit trees for protection against rabbits, points out F. S. Merrill, assistant professor of horticulture in the Kansas State Agricultural college. Every spring, however, it is necessary to remove these wrappings, and this requires a great deal of labor and in the long run is expensive.

"Successful results have been reported from the use of poisoned alfalfa spread near the runways," said Professor Merrill. "Caustic paints also have been used successfully at times in reducing the feeding of the rabbits."

"The best method to protect fruit trees from rabbits is to band each tree when planted with a cylinder of galvanized screen wire. This method has furnished protection except when the ground has been covered with snow, which allows the rabbit to work above the screen. To prevent injuries to the tree, cotton often is stuffed in at the top between the wire and the tree."

HOGS SHOULD BE GIVEN BOTH SALT AND CHARCOAL

Needed Mineral Matter Is Supplied by This Method

Salt and charcoal should be provided to furnish hogs with mineral matter, according to Ray Gatewood, instructor in animal husbandry in the Kansas State Agricultural college.

"Salt should be available at all times, preferably in an open shed where it can be protected from the weather," said Mr. Gatewood. "Charcoal is best fed from the hopper or self-feeder, so as to prevent waste."

"It is a common practice to burn cobs until the cob is well charred, and then the fire is smothered and the hogs are given access to this. Some people char their cobs in a pit, and when the fire has gained good headway, the top of the pit is covered with a piece of sheat metal, and then covered with dirt to keep out the air. The charcoal can then be used as it is needed. It is advisable to add salt to the charcoal as it makes it more palatable, and is also especially good for the hogs."

HATCH CHICKS IN MARCH

INCUBATOR SHOULD BE SET IN FIRST HALF OF FEBRUARY

Cockerels Will Be Ready to Sell When Market Is Good—Care Must Be Taken in Preparing and Operating Machine

If spring "fries" and fall eggs are desired the incubator should be set the first or second week in February, giving a hatch in the early part of March, according to T. S. Townsley, instructor in poultry husbandry in the agricultural college.

"The main purpose of an early hatch is to allow the pullets ample time to mature before cold weather," said Mr. Townsley. "If they do not do this they will not lay until the following spring. Cockerels hatched in March will be ready to sell when the market for fries is good. The early hatched chicks will be large enough to be turned out on the ground by the time grass and other plants have started to grow. They will thus get the advantage of the green feed."

USE DISINFECTING SPRAY

"Before starting the incubator it is advisable to spray the machine thoroughly with a 2 per cent solution of coal tar disinfectant. This will kill any germs or spores that have lived through the winter. The incubator should be kept in a warm room, preferably a cellar, in order that outside weather conditions may not cause the temperature of the machine to drop to a dangerous point."

"The incubator should be run two or three days to test the temperature before the eggs are put in. The machine should be kept at a temperature of 101 degrees the first week, 102 degrees the second week, and 103 degrees the third week. The thermometer should be kept on a level with the top of the eggs."

GUARD AGAINST ACCIDENTS

"The lamp should be filled and the wick carefully trimmed each day. It is well to do this in the morning or at a time when the machine can best be watched to see that the flame does not get too high. The lamp should not be filled entirely full as the oil may then run out when it expands and cause an explosion. In cleaning the lamp the wick should not be cut but the burnt portion scraped off with a match or piece of wood so as to keep the top even."

"The eggs should be turned and cooled before the lamp is cared for, because if there is any grease or oil on the hands when the eggs are handled it will injure the hatching qualities of the eggs. They should be turned every day for the first 18 days. It is a good plan to move the eggs at the outside of the tray to the inside to overcome any difference in temperature. Beginning with the third day the eggs should be cooled each time they are turned. The proper temperature is reached in cooling when the eggs feel cool when touched to the palm of the hand or to the eyelid."

FARMERS GAIN NEW IDEAS BY TAKING VACATION TRIPS

Those Who Till Soil Deserve a Rest, Believes Rural Service Worker

That farmers who have the vacation habit have had a direct bearing upon the rapid development of rural community ideals in Kansas, is the opinion of Walter Burr, head of the rural service department in the Kansas State Agricultural college.

"The opportunity for contrast and comparison and rest and recreation from duties offered by a vacation, broadens the farmer's scope and makes him a more progressive citizen," said Mr. Burr. "He comes back home better satisfied or with a desire to im-

prove his community, if it needs improvement.

"Vacations should not be postponed. A farmer deserves a vacation, and the community needs the new ideas that may be brought in by those who visit new scenes."

EDITOR SHOULD SERVE HIS COMMUNITY FIRST

Should Not Seek Primarily Commendation of Other Newspaper Men, Says R. P. McColloch

The purpose of an editor should be to serve his community rather than win the applause of newspaper brethren, in the opinion of R. P. McColloch, until recently editor of the Anthony Bulletin, and one of the best known newspaper men in Kansas, who spoke before the college class in editorial practice.

Country editors should devote their energies to the development of citizenship, Mr. McColloch contended. The newspaper man should always lose himself in the upbuilding of his community. He should hold fast to the truth in editorial comment as well as in news.

"Don't give too much space on the editorial page to either politics or religion," he advised. "The editor should be a religious man and this fact should be reflected in his paper, but he should avoid discussion of detailed religious questions on the editorial page in order to avoid giving offense."

Mr. McColloch laid special stress upon paragraph writing. Editorial matter should be put in a brief, meaty form, he contended.

The speaker, in response to a question, urged the study of the best English prose writers as a preparation for editorial writing. He mentioned in particular Bacon and Macaulay, pointing out their mastery in diction.

FINE LINENS WILL RISE 30 PER CENT BY SPRING

Mercerized Cottons and Ramie Fabrics Are Being Extensively Used—War Closes Many Factories

The present shortage of linens due to the European war has led to a greater use of the so-called ramie linens and mercerized cottons, and consequently women should exercise greater care in choosing linens, according to Miss Emma F. Fecht, instructor in domestic art in the Kansas State Agricultural college.

"The damask and pure dress linens will increase 30 to 40 per cent in price by spring," says Miss Fecht. "The finer linens are nearly all imported, and the coarser linens are produced in this country. The flax is cut by machinery here, and this process breaks the stem. In Europe the flax is pulled by hand. This process preserves the length, and keeps it in an unbroken and smooth condition."

"The French linens are the finest and have most elaborate designs. Some of the factories in France have been forced to discontinue on account of the war. Belgium, which is a flax producing country, is now a battlefield. War brings pollution of streams used in the process of retting. In retting, the flax is soaked until the outer covering of the stem is destroyed. In the United States the process is done chemically, which is hard on the fiber."

"The women in Russia have kept up the industry as well as possible. This country is dependent on Russia only for the coarser linens, and if transportation is possible the United States may obtain these. From Germany, the United States imports some of the plainer, but none of the elaborate designs. This country is not dependent on Irish linens to any great extent. They consist mostly of the finer handkerchief linens with hand work."

TRAP TO CATCH WORMS

NEW DEVICE INTENDED FOR CONTROL OF CODLING MOTH

Is Simply Constructed and Will Not Destroy All the Pests but Affords Guide to Right Time for Spraying

Rat traps, gopher traps, mole traps, and fly traps have taken their places on the farm. The latest addition to the trap list is the codling moth trap designed to catch and hold in imprisonment the worm that ruins the apples on the trees. It is expected to prove a big money saver for the orchardists of Kansas.

Use of the trap in Kansas, believes T. H. Parks, entomologist for the division of extension, Kansas State Agricultural college, doubtless will serve as a guide in timing the later spray applications for the codling moth.

LATE BROOD LAST YEAR

This insect was injurious in the southern part of Kansas in 1916 and, owing to the emergence of a late brood in some orchards, the regular spray schedule did not hold it in check. It is not possible, except by banding the trees or by the use of the codling moth trap, to foretell the appearance of a late brood of the worms.

The trap is not set by means of a spring nor baited with cheese or even apples. It consists of merely a band of 12 mesh wire screen through which the full grown larva or worm of the codling moth crawls and beneath which it changes to the adult or moth stage. The moth is too large to emerge through the screen. Most of the codling moth larvae after leaving the apples spin a silken case or web under the rough bark on the trunk of the tree and there change to the moth stage.

BAND TAKES MUCH CARE

The old practice of placing a burlap band around the trunk to entice the worms has been effective in reducing their numbers, but is rarely used as it requires a great deal of attention.

The new trap consists of a strip of burlap wound around the trunk in the usual way, but over this is tacked a strip of 12 mesh wire screen, six or eight inches wide, which encircles the tree trunk over the burlap band. The upper and lower edges of the screen are turned under and carefully tacked to the bark, which has been scraped smooth.

There should be a close union between the edges of the screen and the bark. The worms, as they crawl down the tree, pass through the screen and pupate beneath the band. When the moths emerge they are unable to escape through the screen. Owing to the fact that only a part of the worms present are enticed beneath the band, the trap can in no way take the place of spraying, which should be done immediately after the first moths appear in the trap.

WAR HASN'T STOPPED WORK OF RUSSIAN INVESTIGATORS

Moscow Professor to Introduce Apparatus Like That Used in Kansas

That the war has not stopped scientific efforts in Russia, is evidenced by a letter received by Dr. R. K. Nabours, head of the zoölogy department of the college, from Prof. Nicholas Koltzoff, of the Institute of Biology, Moscow, Russia. Professor Koltzoff makes inquiries concerning the temperature and moisture control apparatus which has been successfully used by the departments of zoölogy and entomology here during the past two years. An identical apparatus is to be installed in the Moscow institution. The letter came through uncensored.

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N. A. CRAWFORD Managing Editor
J. D. WALTERS Local Editor
ADA RICE, '95, M. S. '12 Alumni Editor

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WEDNESDAY, JANUARY 31, 1917

WHERE KANSAS EDITORS STAND

The officers of the Kansas State Editorial association are to be congratulated on the excellence of the program presented last week at the annual meeting.

Subjects of interest to every Kansas newspaper man were presented by men in touch with Kansas publishing conditions. No newspaper man could listen to the addresses and papers without rejoicing in the history of Kansas journalism in the past, without realizing its development in the present, or without seeing its progressive and brilliant future. An all-Kansas program of such quality shows where Kansas editors stand in ability, efficiency, and devotion to their calling.

CONSISTENT GROWTH

An increase of 50 per cent in the last 10 years and of 220 per cent in the last 20 years is shown by statistics prepared by J. C. Mohler, secretary of the state board of agriculture, on the agricultural products of Kansas.

The figures thus presented show healthy, consistent growth. Steady gains have been registered in the production of wheat and other long known crops. At the same time, such crops as alfalfa and the sorghums, tending to utilize most effectively the soil and climatic conditions in many parts of the state and also to increase the amount of live stock on Kansas farms, have developed production to a remarkable degree. In 1916 sorghum productions were worth nearly \$20,000,000, while the production of alfalfa reached a value of more than \$30,000,000.

The development of Kansas agriculture has been made possible through more effective methods, by the productions of standardized American crops, and by the introduction and improvement of crops particularly adapted to Kansas conditions.

FARM INSURANCE

There are said to be farmers' mutual companies in this country handling over a million dollars in risks at a cost of less than \$200 a year, excluding, of course, the losses paid. The typical farmers' company can do things of this kind because it pays no salaries or only a very small salary to a secretary. Often there is no payment except a small amount per day to a secretary and adjuster for the time actually given in adjusting losses. In addition to this there is some slight expense for postage in case members are notified of meetings and assessments by mail and for paper, envelopes, and a few simple office supplies of this kind.—Prof. J. O. Rankin.

IDEAL CONDITIONS

Looking over all the trades and professions which are followed by civilized and barbarous peoples, none give opportunity for rearing the family

under so nearly ideal conditions as does the profession of agriculture. None furnish such good conditions for rearing children and for developing them into strong, natural and useful men and women. Here, then, on these broad acres of America, under the flag which we love, we are to help transform the rude surroundings of the pioneer and the slovenly homes of the careless into pure and beautiful nurseries of American citizenship.—Isaac Phillips Roberts.

MAINTAINING FERTILITY

The ideal practice is to return to the soil, either directly or in farm manure, all plant food not sold from the farm. However, sound fertilizer practice does not mean that the plant food constituents must be purchased and returned to the soil in the proportions in which they are removed by crops. Many clay soils contain large quantities of potash. Here the problem is to render this natural supply of potash available to crops by good soil management, rather than depend upon potassic fertilizers. On the other hand, there are extensive areas of soils, especially those of an extremely sandy nature, that are very deficient in plant food. The plant food materials should be returned to these soils in amounts exceeding those in which they are removed by crops, as there is considerable loss of these materials as a result of leaching and erosion.—Dr. J. O. Morgan in the Southland Farmer.

READING IS A HABIT

A taste for good reading cultivated early in life, is one of our greatest blessings. To the man or woman who enjoys reading and who has learned to choose the best, few of the wonders and beauties of the world are barred. The reader need never be alone, for it is always possible to have at least a few of his book friends near him. These he can choose according to his mood and they will minister to his need in an almost human way.

With some, the reading habit is a natural one. With others it is possible of acquirement if thought is given to it early enough. The creation of a love for good reading is very important in the child's training. All his leisure hours should not be spent reading, for play hours are essential to the normal development of all children. But reading is as helpful to the development of the mind as play is to the body. As each day's exercise causes the body to grow normally, so will good daily reading exercise the powers of the mind and give it strength and development.

Building character—the highest type of manhood and womanhood—is the biggest and most important work there is, and we each have a part in it to the extent that we seek to guide childhood in the direction of the best influences. Through good literature the child can be surrounded with many of these best influences.—Kansas Farmer.

AN IMPORTANT INDUSTRY

The importance of the poultry industry in this country scarcely is appreciated. There is hardly a farmer that does not keep some kind of fowls and many have large flocks of various kinds. Even where no fowls are sold and no records kept poultry furnishes food and saves the farmer much expense in nutritious foods that, without poultry and eggs, must be bought.

The domestic fowls are producing annually in the United States more than \$600,000,000 worth of eggs and poultry and the combined value of all poultry products in the world must be a billion dollars.

Poultry raising is a modern sideline on the farm. Only in recent years has much attention been given to poultry as a profitable sideline or even for the family table. When we think of the magnitude of the industry and remember that modern poultry raising is recent we are impressed with its possibilities for the future.

That the demand is increasing for poultry and eggs there can be no doubt. Our cities and towns are increasing in population and this means a larger consumption of poultry products. There is also a greater demand for a lighter but more nutritious

diet than where more people lived by muscular toil. Where there is greater wealth and higher compensation the demand for these products seems to be greater.

It does not seem that the increase in the prices of meat has caused eggs to advance, for when eggs were selling at from six to eight cents a dozen fewer were consumed than now, when a dozen eggs costs more than a pound of steak. Probably a better knowledge of the nutritive value of eggs, their palatability and the difficulty with which they may be adulterated has had much to do with the greater demand for them. When the cook takes fresh eggs, breaks them and prepares them quickly as she pleases, she knows she has pure, wholesome and nutritious foods. And they may be prepared in many ways. Besides this, the use of eggs in cooking is now

prairie fire swept over Abe's place, burned all his buildings and some of his live stock that had not starved to death. Abe and his family escaped with their lives but that was about all. The next year Abe managed to get in a crop, part of which was eaten up by the chinch bugs, part by the army worm, and part dried up and blew away. The next year there was enough rain to make up for four dry years and Abe lost everything in the way of crop by floods and wet weather. The next year he managed to mortgage his land, invested the money in cattle and lost all of them with Texas fever. Along in the early 80's there were three dry years in succession during which Abe didn't raise enough crop to feed a healthy katydid. It got so dry at times that it was necessary to prime the mourners at a funeral before they could shed tears for the departed. In

The Country Newspaper

Edward W. Hoch before the Kansas Editorial Association

THE country newspaper ought to be an exponent of the best thought in state and nation. On the mechanical side, it should be as beautiful and as artistic as it can possibly be made. Intellectually, it should be robust and fearless. The country newspaper should be grand in its outlook, splendid in its grasp of public questions, and noble in the courage of its convictions.

The editorial page should be a school of applied English to which every boy and girl would turn, not so much to find out what the editor says as to learn how he says it. The country newspaper ought to be an example of good, strong, intelligent English.

There was never before a time when the country newspapers of Kansas measured up so fully to this standard.

almost indispensable.—Farm and Ranch.

PERSEVERANCE WON

"That," said the old resident as he watched a rugged, gray haired and gray bearded man drive a brand new automobile up in front of the hotel in a central Kansas town, "is Abe Simpkins. Abe is one of the most substantial citizens in this county just now, probably could draw a check for \$50,000 and have it honored at any of the banks which happened to have that much currency on hand; but when it comes to going up against hard luck and finally climbing over it Abe comes near taking the bakery. Abe struck Kansas the year before the grasshoppers. He came from Illinois, a young fellow with a wife and four or five children and \$3,000 or \$4,000. He was mighty well fixed as new settlers went in those days. He took up a homestead of first class land and built him a good house and barn, that is, good for those times, and settled down to break up the sod and begin to farm. The first year he did pretty well; got a good crop of sod corn and accumulated some live stock which kept fat on the prairie grass. Of course he raised a good many worms with the corn, but it averaged up well for sod corn.

"The next spring Abe broke out a lot more ground and began to go it strong. He was of the opinion that he had the world by the tail with a down hill pull. Then came the grasshoppers. It took 'em about half a day to clean up Abe's corn and garden truck, and some young trees he had planted. Abe himself remarked after the hoppers had gone and he looked over the place, that for a thorough workman-like job of cleaning up those birds left nothing to be desired. They ate everything green there was about the place and then tackled the green paint on the house. As a result a number of them suffered from painter's colic for several days afterward.

"Abe had spent practically all his money for buildings, farm machinery, and some live stock. After the hoppers left he had nothing with which to feed the live stock and as his neighbors had no more than he had there was no chance to dispose of the animals and most of them starved. Late that fall a

1889 Abe raised a bully corn crop which he sold at 10 cents a bushel. He applied the proceeds as far as they would go on payment of the interest on his mortgage and gave a chattel mortgage on his two milk cows to secure the balance of the interest. It was along in the 90's when Abe's troubles culminated by getting a leg broken and seven ribs caved in. While he was recuperating his wife and children were all attacked at once by the smallpox. At the end of 30 years after he came to Kansas Abe hadn't a cent of cash and his farm and live stock were all mortgaged to the limit. While he was in this financial condition he got up on his barn to patch a hole in the roof, fell off, broke his shoulder, dislocated his hip, and sprained his back so that he was not able to get out of bed for three months. At last the tide turned. Things began to come Abe's way. One year he raised 3,000 bushels of wheat which he sold for a dollar a bushel and had 50 acres of alfalfa which netted him \$50 an acre. When luck began to come his way it came as fast as the hard luck had come before. Then some oil prospectors came round and leased his farm, put down a well and struck a gusher. Abe's royalties are now \$5,000 a month and he is grieving because there isn't a bird around his place that he can throw the money at.

"Prosperity hasn't made a fool of Abe. When a man complimented him the other day on being a shrewd financier he laughed. 'Shrewd financier, nothing,' he said. 'I'm a case of 90 per cent luck and 10 per cent bull headed stubbornness. If any other man had stuck to a losing game for 30 years I would have said that he was a fool. I stuck, not because I was smart, but because I was such a chump that I couldn't figure where else I could go to make a living.'"—T. A. McNeal in the Farmers Mail and Breeze.

The National Live Stock association has protested against increases in grazing fees in the national forests.

Alumni of the college engaged in educational supervision are planning to attend the meeting of the department of superintendence of the National Education association in Kansas City, Mo., February 26 to March 3.

BLACK POPLARS

"Centaur" in the Westminster Gazette

I know five poplars on an inland hill
That murmur always with a mournful sound
Of distant waterfalls, while on the ground
No blade is stirring, and the air is still.
And I have often lain there wonder-bound
At the sad music of those trembling leaves,
For in that hour the quicken'd soul receives
High converse with the mystery profound
Of human sorrow and the tears of things.
So I return more kind, more gently wise,
More filled with that sympathy which brings
A look of love and hope to tearful eyes,
Lest it should seem the world's vast load of pain
Is measureless, and love and hope are vain.

SUNFLOWERS

The wife's clothes break the man.

Adam was a lucky cuss. He could earn his bread by the sweat of his brow.

You can still be thankful that the h. c. of l. can't stop you from blowing your nose.

Have you ever noticed that people talk about the Monroe Doctrine, detachable cuffs, and suspenders in the same tone of voice?

After all, perhaps the best combination is the husband who is willing to wipe the dishes and the wife who is too proud to let him do it.

HUBBY'S DINNER

She plays at bridge with other queens
Till daylight dies.
And then she buys a can of beans
And homeward hies.

—Kansas City Journal.

He gets along just like a shark
Until he tries
A semi-humorous remark,
And then he dies.

A QUARTER CENTURY AGO

Items from The Industrialist of January 30, 1892

The Hamilton annual tonight.
Two beautiful blooming orchids attract visitors to the greenhouse.

The Hon. Josephus Harner of Leonardville visited his two sons in college yesterday.

News comes from far-away Australia that a daughter arrived at the home of Prof. and Mrs. E. M. Shelton on the sixteenth of December.

N. E. Lewis, '88, writes from Hamilton, Ohio, where he is employed as a designer in a large tool manufactory, with reference to the second degree.

G. E. Hopper, '84, has gone to Beloit to superintend the construction of the addition to the Girls' Industrial school, for which he has the contract.

Professor Willard's horse took fright at a bicycle yesterday afternoon, and, running away, wrecked the phaeton. The professor was thrown out, but escaped serious injury.

State Secretary Wilbur of the Kansas Gospel union visited the college last week. He organized a county committee of the union while here, of which Assistant Marlatt is president.

The newly organized class in floriculture, in charge of Professor Popenoe, consists of 10 young ladies, each of whom is assigned space in the propagating pits for the bedding of plants and cuttings.

Regents and faculty, with a very few faculty wives, united Tuesday evening in an attack upon roast turkey and other good things prepared by the cooking class. Misses Little, Reed, Short, and Conwell, postgraduate students, presided. President Caraway of the board added not a little to the pleasure of the affair by a five minute talk in which he said a good many pretty things about the college and college people, and modesty alone prevents their reproduction in cold type.

AMONG THE ALUMNI

E. E. Trusket, '10, is located at Montverde, Fla.

Dr. E. C. Jones, '16, is practicing veterinary medicine at Gothenburg, Nebr.

Miss Verrall Craven, '14, is taking a librarian's course in the University of Illinois.

Miss Ruth Kellogg, '10, is spending the winter in Washington, D. C., with her brother, E. H. Kellogg, '11.

Dr. L. B. Wolcott, '12, is now located at Shelton, Nebr. He is president of the Shelton Serum company.

Mrs. Lora (Waters) Beeler, '88, is living in Groveland, Fla. She writes that Mr. Beeler has been ill for over a year.

George E. Stoker, '90, is a member of the law firm of McNair and Stoker, Merchant Exchange Building, San Francisco.

Fred B. Layton, '15, visited in Manhattan last week on his return from Kansas City, where he went with a shipment of stock.

E. O. Graper, '13, and Mrs. Murrel (Sweet) Graper, '14, are living near El Dorado, where Mr. Graper operates a dairy farm.

Miss Eva Hostetler, '15, writes of her interest in her work at Kearney, Nebr. She is already planning to take work in the summer school.

Lee R. Light, M. S. '16, instructor in English in the college, is absent from his class work this week on account of serious trouble with his eyes.

Frank H. Freeto, '15, is spending several weeks at the Sigma Alpha Epsilon house. He is doing work for the state highway department.

Jay Lush, '16, who is teaching at Pratt, spent his vacation at Altamont, where he gave an interesting talk in the Labette county high school.

W. E. Stanley, '12, is enjoying his work at Purdue university, where he is employed as instructor in hydraulics in the school of civil engineering.

T. K. Vincent, '16, is working in the International Harvester company shops at Milwaukee, Wis. He will return to Manhattan for a visit soon.

Dr. E. C. Jones, '16, is practicing veterinary medicine at Gothenburg, Nebr. He writes that he has a good territory and all the work that he can handle.

David R. Shull, '16, and Gene Blair, '12, are now located at Bard, Cal., where they are engaged in experimental work for the United States government.

Floyd W. Johnson, '15, is in the hardware business with his father at Downs. Owing to the sickness of his father he has been running the business by himself.

M. I. Stauffer, '07, sent his draft for \$20 for life membership in the alumni association. He is connected with the Wilson beef and pork packers, Oklahoma City, Okla.

A. C. Berry, '16, who is working for the extension division of the Kansas State Agricultural college, spent the week end at the Sigma Alpha Epsilon house in Manhattan.

Harry E. Gunning, '16, is now located on a 60-acre orchard near Eldorado Springs. He writes that he is busy getting the orchard into shape for next year's crop.

Miss Rembert Harshbarger, '15, is teaching domestic science and art in the Fowler high school and has established a lunch room in connection with her teaching work.

D. B. Swingle, '00, professor of botany and bacteriology in the University of Montana at Bozeman, writes to inquire about the paid up membership plan with the expectation of becoming a subscriber.

Miss Fern Faubion, '16, is teaching home economics in the public schools of Chokio, Minn. She writes: "I enjoy my school work so much that I cannot

find much time for outside affairs, but I am very anxious to return to K. S. A. C. for commencement."

BIRTHS

Born, to Mr. Milton D. Snodgrass, '06, and Mrs. Margaret (Minis) Snodgrass, '01, at Seward, Alaska, on January 4, a daughter, Mary Mae.

DEATHS

MRS. H. F. ROBERTS

Mrs. H. F. Roberts, wife of the head of the department of botany in the college, died Tuesday morning at the age of 45 years. She had been ill but a few days.

Mrs. Roberts was a native of Kentucky and a graduate of Vassar college. During her residence here, she was active in the life of the college and in club and welfare work in the city, and was highly thought of in social and intellectual circles. She is survived by her husband, three sons, her mother, and four sisters.

MARRIAGES

SQUIRES-HANCOCK

Miss Fern Squires and Mr. John Hancock, '12, were married January 3. They will make their home at Westphalia.

HOUGHTON-HORTON

Miss Lura Beatrice Houghton, '13, and Mr. Halbert G. Horton were married in All Saints' church, Portland, Ore., Tuesday afternoon, January 16, the Rev. H. K. Howard officiating. Mr. and Mrs. Horton left on a trip to Seattle but will make their home at 1146 Williams avenue, Portland.

Mr. and Mrs. Horton were classmates in the Fitchburg (Mass.) high school, and were well known socially there. Mrs. Horton is a member of the chapter of Delta Delta Delta in Manhattan.

SIZE IS NOT IMPORTANT IF HORSE WALKS POORLY

Action in Draft Animal Is Important Feature—Careful Shoeing May Improve Gait

Proper action in the draft horse is important, according to David Gray, assistant in animal husbandry in the Kansas State Agricultural college. Size and power are of little value if the horse has not enough agility to handle his big weight in a manner yielding the greatest efficiency.

"Action of the draft horse should be clean, bold, and rather stylish," said Mr. Gray. "In moving, the feet should be carried forward and back in a straight line, without padding, winging, or other irregularity of gait. In order to get the best and greatest stride with the least energy it is absolutely necessary that the feet move straight and smooth without defects of gait.

"Knee action in the draft horse is not of great importance. A long stride which covers considerable ground is much more important than high knee action, as ability to cover ground is what is wanted.

"The walk is the important gait. It should be snappy and true with a good length of stride. The action of all four legs should be strong and the movement of the knees and hocks free without indication of dragging or stiffness.

"It is essential to note an animal's action in trotting, because defects in action are more perceptible when trotting than when walking, although the walk is more important from a working standpoint.

"In trotting there should be a clean folding of the knee and hock, the feet being carried in a straight line. The hocks should work close together, for if they are inclined to be carried too far out it causes a bandy-legged appearance which is unsightly.

"Careful shoeing in a great many cases will improve the gait of the draft horse, tending to eliminate undesirable features."

YOUR HOUSE—ITS HEAT

DOCTOR WALTERS POINTS OUT BIG FACTOR IN HOME HEALTH

Best Apparatus Keeps Air Comfortable But Fresh Even in Coldest Weather—How to Get the Best Results in Tending Furnace

The health and comfort of the home depend to a considerable extent upon its heating apparatus. This is second in importance only to sanitary plumbing. So says Dr. J. D. Walters, professor of architecture in the agricultural college.

"The ideal heating apparatus is one that will supply a sufficient amount of heat and fresh air to every room in the house to make it comfortable in the coldest weather," said Doctor Walters. "Such a system must be easy to manage, and therefore must not be complicated in construction.

"A hot water heating system costs more to install than the ordinary hot air furnace, but the amount of fuel required is often considerably less than that needed to heat the home with the latter. For a small house, however, the hot air furnace is more often used because it has the decided advantage of supplying fresh air at all times, while all the other systems demand special ventilation arrangements.

CAST IRON MOST COMMON

"The furnace may be constructed of cast iron, wrought iron, or steel. Although the cast iron type has several serious disadvantages it is used more than either of the others, because it will not vary in temperature so rapidly.

"The smoke pipe should connect with the chimney as directly as possible, for elbows have a tendency to diminish the draft. The chimney flue should have an opening at least eight by 12 inches, and it is essential that there be no second opening for either fireplace or kitchen stove. A tightly fitting clean-out door should be placed at the bottom of the flue.

"The location of the furnace should be somewhat to the north and west of the center of the house, that is, toward the prevailing cold winds. The pipes leading toward rooms in that part of the house should be given the preference as to shortness and size, though all pipes should be made nearly the same length. Horizontal runs of pipes should be made as short as possible, especially in those leading to first floor registers. Each room should have a separate pipe as the heat will naturally go to the room where there is the least resistance when the wind is blowing. The pipes should be made of bright tin, and should be provided with asbestos covering.

WHERE REGISTERS BELONG

"Registers on the first floor may be placed either in the wall or in the floor, but if placed in the wall they will prevent the cutting of carpets. When only the first floor is heated the registers should be placed in the wall. The area of the register outlet should be about 15 per cent greater than the section of the hot air pipe.

"For first floor rooms up to 12 feet square and having a 10 foot ceiling, nine inch pipes are sufficient, but for larger rooms up to 16 feet square, a 10 inch pipe should be used. Sizes for other pipes for larger rooms may be determined from these figures.

"The source of the cold air supply should be given much consideration. The size of the return air pipe is often made equal to three-fourths of the combined area of the hot air pipes. It should never be smaller than this and might be made the full area of the hot air pipes without any disadvantages.

NO MORE TROUBLE THAN STOVE

"If the furnace is of sufficient size and is properly located and well installed it should give no more trouble than a stove. The satisfaction of having a warm house and especially a warm floor, is an advantage.

"The cost of the hot air furnace for an eight room house should not exceed \$200, while a system of this character may be placed in a smaller cot-

tage for about \$125. It is generally estimated that every additional room heated by a hot air furnace will add to the original cost approximately \$25.

"The advantage of a hot water system is that the water begins to circulate through the pipes as soon as the fire is built, and while it takes from 20 to 30 minutes to obtain any amount of heat, the radiators will retain their warmth from three to five hours after the fire is out.

HOT WATER IS PREFERRED

"Hot water heating generally is considered the most satisfactory, as it requires the least attention to keep a desired temperature throughout the entire house. This type of furnace may be said almost to take care of itself.

"The original cost of the hot water system is from two to three times that of the hot air furnace, but the many advantages in its operation make it more satisfactory and economical.

"The steam heating system also has its advantages and disadvantages. The radiators need not be so large as those for a hot water system and they do not take up as much valuable space in the room. A much higher temperature throughout the entire house may be retained, but more attention must be given the fire to keep the heat uniform.

"A serious disadvantage of this system is that the heat cannot be regulated properly. The steam radiator is either hot or cold.

"The cost of a steam heating system is slightly less than that of a hot water plant, but is more than that of the hot air furnace.

MUST BE HANDLED PROPERLY

"No matter how efficient a heating plant may be, if the fire is not taken care of scientifically, only mediocre results will be obtained.

"Under the most varying conditions nut coal gives the best satisfaction in the furnace. Large lumps usually form a fire that is too open for the best result, but it is well to use some of the larger pieces for the night fire.

"Four or five times a day should be sufficient to apply coal to the furnace fire. Varying weather conditions, however, govern this point entirely. The proper regulation of the damper, also, has much to do with the amount of coal that is burned, but this regulation must be studied for each individual furnace, because no two heating systems have the same requirements.

"Heating plants are of much the same nature as plumbing systems. Their character demands that experienced mechanics supervise their installation. And while general information may be given, yet every individual case has its peculiar conditions which must be worked out by someone familiar with the possibilities of the system being installed."

COLLEGE DEBATE SCHEDULE IS HEAVIEST IN COUNTRY

Girls Will Indulge in Several Intercollegiate Battles of Words

Kansas State Agricultural college has a heavier debate schedule for the present season than any other college or university in the United States.

The question of compulsory arbitration of railroad disputes will be debated with a team from the State Normal school February 2. The next contest will be a woman's debate with Otawa university, February 9, when the subject of a single house legislature will be discussed. March 2 another team of women will debate the minimum wage question with a team from Washburn college.

The fifth, and probably the most important men's debate of the season, will be the pentagonal, between the agricultural college, Washburn, College of Emporia, Ottawa university, and Baker university. The minimum wage question will be the subject of discussion.

The last debate will be by women on the question of a federal commission to regulate the price of food stuffs, a subject which has never before been debated. This battle will take place April 27.

MAKE WIND AN ASSET

WINDMILLS MAY BE USED TO GENERATE ELECTRICITY ON FARMS

Plant Costs \$750—Price Is Main Objection to this Method of Lighting, Points Out Prof. C. E. Reid of Agricultural College

Electricity generated by wind power in sufficient amount to supply a large farm has been found to be possible, according to C. E. Reid, professor of electrical engineering in the Kansas State Agricultural college.

"Preliminary tests were made on this proposition three years ago," said Professor Reid, "and enough success was had to make it seem desirable to continue the tests. In these tests the generator was belted to the windmill at the foot of the tower. Friction losses were enormous. It took a nine mile wind to start the mill and the noise was distracting.

GENERATOR GEARED TO MILL

"With the first series of tests the total cost of the plant was \$775, whereas a gasoline engine plant of the same power and storage capacity would have cost \$500. One-sixteenth of the time lights would be cut off because the wind velocity was too small to run the mill. To overcome this disadvantage a large battery is necessary to store up enough current to last during the calm spells.

"In the tests now being conducted, the generator is mounted on the head and geared direct to the mill. Ball and roller bearings are used throughout so that a six mile wind or less will start the mill. The cost of this plant is estimated at \$750 but improvements in the windmills would reduce this to \$500.

EUROPEAN PLANTS LIGHT TOWNS

"The present objection to the use of windpower for developing electrical energy is the first cost of the outfit. Until it is possible to get windmills which will run on light winds the cost will not be cut down on account of the size of battery necessary to store up current for use when the mill does not run. With a windmill designed for higher speeds than are used in present mills there would be little time during the year that winds would not be sufficient to operate it, at least a part of the day.

"It is probable that one of these plants would not be more than sufficient to take care of one or two small residences or of one large farm plant, although in Europe, large and expensive plants have been developed that successfully light small towns."

SMALL BREEDER IS HELPED TO MARKET HIS ANIMALS

College Holds Sales with View to Being of Service

Marketing pure bred live stock is a difficult problem for the small breeder. Because of this fact the department of animal husbandry in the Kansas State Agricultural college holds breeders' sales at Manhattan with a view to being of service to these men.

"Because the small breeders have only a few animals for sale buyers are not so readily attracted as they are to places where there are large numbers of individuals from which to make selections," commented Dr. C. W. McCampbell, associate professor of animal husbandry.

"A representative of the animal husbandry department solicits entries to the sales at the college, checks the pedigrees of the animals, inspects them, and accepts only creditable individuals. He also supervises the advertising and manages the sales. No charge is made for personal service, barn room, or the use of the sale pavilion.

"This line of work is meeting with hearty approval from the breeders. The Hereford sale held here last winter, was a decided success, and the Percheron sale to be held here February 9, promises to be the best Percheron sale ever held in Kansas."

SHED SHOULD BE WARM

BEEF CATTLE MUST BE WELL PROTECTED IN WINTER

Animals Should Not Have to Face Driving Winds and Rains—Timely Advice by A. M. Paterson of Agricultural College

A well ventilated and well lighted dry shed is essential for the protection of beef cattle in winter, according to A. M. Paterson, assistant in animal husbandry in the Kansas State Agricultural college.

"The shed should be located so as to protect the cattle from the driving winds and rains," said Mr. Paterson. "The land should have a natural southern slope and if possible be near a grove."

DRY LOTS ARE ESSENTIAL

"Where a natural southern slope is not available, the place should be supplied with drains so as to keep it dry, and dry lots are essential for the best results. In cases where it is low and has a tendency to be muddy, a cement floor should be provided."

"Much attention should be paid to the economy of construction. A shed which opens to the south and is closed on the east, west, and north is all that is necessary. The main value of a shed is to protect the cattle from hard rains and snows."

"The amount of shed roof depends upon the age and size of the animals. Between 40 and 50 square feet is sufficient for a large two year old steer."

ARRANGEMENT OF FEED BUNKS

"The feed bunks should be conveniently arranged so as to make feeding as easy as possible. From 2½ to 3½ feet of feeding space for each steer is sufficient, but this depends upon the size of the animal."

"The size of the feed lot depends upon conditions. Where there is no natural slope to the ground and it is necessary to use drains or cement floors, yards the size of the shed floor are sufficiently large for cattle on full feed. Where natural conditions exist the lots may be larger."

"Good, clean, fresh water should be kept before the cattle at all times. In places where there is danger of freezing a heater placed in the tank will prevent the freezing."

PLANT ACRE ORCHARDS FOR HOME FRUIT SUPPLY

Farmers Would Save Money by Investing in Trees, Believes George O. Greene, Specialist in Horticulture

Farmers ought to plant acre orchards for the production of fruit for home use, according to George O. Greene, specialist in horticulture in the Kansas State Agricultural college.

"There has been a tendency in the past for farmers to say that they could buy their family supply of fruit cheaper than they could grow it. The fact remains, however, that in most cases farmers do not buy a regular supply of fruit and with the increasing prices it simply means that even the well-to-do farmers are likely to use less fruit than in the past. It means, also, that Kansas may be classed more and more with the fruit consuming rather than the fruit producing states. The general decrease all along the line in fruit production indicates that in the near future farmers and growers will realize that Kansas is practically without fruit."

The extension division of the college will be glad to make suggestions relative to planting and caring for the orchard.

IT'S A REAL TASK TO REAR AN ORPHAN COLT

Cleanliness and Use of Proper Foods Are Important, Points Out Doctor McCampbell

Rearing an orphan colt is a tedious task, and requires much patience, attention to details, and cleanliness, asserts Dr. C. W. McCampbell, associate professor of animal husbandry in the Kansas State Agricultural college.

"Cow's milk is the logical substitution for mare's milk," said Doctor McCampbell, "but as it is lower in per cent of protein, fat, and ash than mare's milk and higher in per cent of

water and milk sugar, allowance must be made for this.

"Add enough warm water to a tablespoonful of sugar—preferably white sugar—to dissolve it, and then add from three to five tablespoonfuls of lime water and enough milk to make a pint. Feed one-fourth of this mixture every hour for a few days, gradually lengthening the intervals between feeding and increasing the amount given at a feed as the colt grows older."

"It is important to warm the mixture to body temperature before feeding. At first, especially, a bottle and nipple probably will be found the cheapest and most satisfactory means of inducing the colt to take the milk."

If the colt scours, cut down on the amount of milk and give two to four ounces of a mixture of two parts of castor oil to one part of sweet oil, advises Doctor McCampbell.

At three or four weeks old, the sugar in the milk may be discontinued, and at three months the colt should be on a ration of all the sweet skim milk it will drink three times daily.

As soon as possible teach the young colt to eat grain and alfalfa or clover, and allow it access to grass. Crushed oats and a little bran make the best grain feed, but if these are not available one may substitute crushed corn and bran in equal parts by bulk with a little linseed meal.

If fed liberally and kept in a thrifty condition, points out Doctor McCampbell, there is no reason why a horse should not be developed that is practically as good as one raised by its own mother.

SECOND ANNUAL ROAD SCHOOL TO BRING 800

Many County Engineers and Others Will Attend Sessions at Agricultural College February 5 to 9

The second annual road school of the Kansas State Agricultural college will be held February 5 to 9. An attendance of between 500 and 800 good roads enthusiasts is expected. Many county engineers will be present to discuss questions of general interest.

Road authorities from Illinois, Iowa, Oklahoma, and the government office of public roads will be among the speakers. Dr. Henry J. Waters, president of the college, will give an address of welcome the afternoon of February 5. E. C. Johnson, dean of the division of extension, will explain the object of the school. A. A. Potter, dean of the division of engineering, will follow with an address. W. S. Gearhart, state highway engineer, will speak on "Cooperation between State and County Officials."

Tuesday morning, February 6, questions pertaining to bridges and bridge construction will be discussed. In the afternoon S. N. Hawkes, assistant attorney general, will speak on "Reinforced Concrete Bridge Patents."

Wednesday morning J. C. Wonders, division engineer, United States office of public roads, will discuss "Federal Aid in Highway Construction." Jasper T. Kincaid, member of the legislative committee of the Kansas State Good Roads association, will speak on "Highway Administration." John C. Nicholson, chairman of the legislative committee of the 365-Day Road club, will discuss "Financing Surfaced Roads."

Wednesday afternoon H. B. Walker, state drainage and irrigation engineer, will read a paper on "Protection of Roads and Bridges from Encroaching Streams." Robert C. Terrell, professor of highway engineering, University of Oklahoma, will deliver an address.

T. R. Agg, professor of highway engineering, Iowa State college, will speak at 3:30 o'clock Thursday afternoon on "Iowa's System of Administration and Accounting." He will deliver an address in the evening on "The Gang and Patrol System of Constructing and Maintaining Roads." B. H. Piepmeier, maintenance engineer, state highway department, Springfield, Ill., will speak Friday morning on "Road Maintenance." J. Frank Smith, president of the Kansas State Good Roads association, will speak in the afternoon.

TO KEEP MEAT IN SNOW

A. M. PATERSON DISCUSSES EFFECTIVE METHOD OF PRESERVATION

Freezing Is Another but Less Satisfactory Way to Retain Freshness of Product—Animal Husbandry Specialist Gives Suggestions

Freezing and packing meat in snow are methods of keeping fresh meat on the farm, points out A. M. Paterson, instructor in animal husbandry in the Kansas State Agricultural college.

"Meat used while fresh is more nutritious and palatable than salted or cured meats," said Mr. Paterson. "In freezing meat a carcass is cut up into quarters, or even smaller pieces, and hung in a building where it will remain frozen solid. When a portion is wanted, it may be cut off with a saw. If the meat is taken into a cold room and slowly thawed out the flavor is only slightly injured."

THAWING SHOULD BE PREVENTED

"No more should be taken in at one time than is wanted for immediate use. Repeated freezing and thawing are injurious to the flavor and quality of the meat—hence the importance of keeping it where the temperature will remain sufficiently low to prevent thawing."

"Snow packing is a better way of keeping meat than freezing. The carcass should be cut into steaks, roasts, and boiling pieces. All trimming for table use should be done before allowing the meat to freeze. Lay each piece out to freeze separately where it will not come into contact with other meat. Use a box large enough to hold it all, and put a layer of dry snow at the bottom."

HOW MEAT IS ARRANGED

"When the meat is frozen put in a layer, packing it so that no two pieces touch. Cover this with a layer of snow, and lay alternate layers of snow and meat until the box is filled. Set the box in an outside shed or other place where it will not be subject to sudden changes of temperature."

"For convenience in getting the meat when wanted it is well to pack the steaks in one section or end of the box, and the roasts and stews in the other. It will then be necessary to disturb only the section which contains the desired piece. Use dry snow in packing. Be sure that the meat is frozen solid before packing, for then it can be kept through the entire winter unless the weather becomes unusually warm."

GOOD DAILY NEWSPAPER HELP TO MODERN FARMER

Advertisements, Market Quotations, and General News All Assist in Business of Agriculture

The farmer can buy more economically if he studies the advertisements in a good daily paper, asserts H. W. Davis, associate professor of the English language in the Kansas State Agricultural college. He should keep posted on price fluctuations.

"Some farmers are outside the trading radius of the better daily papers," said Mr. Davis, "but values of food, clothing, and other necessities should be practically the same in all stores. Thus the daily paper enables the farmer to know when he is paying the proper prices for materials. The farmer is continually buying new implements. Here, too, the daily paper is a medium to more efficient buying."

"It is the only fair thing to the farmer and his family to keep up to the times as far as general news is concerned. It is necessary to know war and political news as well as new methods in agriculture. Market quotations are given to the farmer in his weekly stock paper, but he can watch the rising and falling prices in a daily paper to a much better advantage. He gets market news from a general point of view."

"Truck farmers, poultrymen, and other farmers near a large city must of necessity take a daily paper. They must know the demands of the city where they sell their products. They must know what the people want, when

they want it, and how they want it. The value of a daily paper should not be underestimated."

"The farmer does not have a great deal of daily contact with other business men. Without a daily paper he has little relationship with the outside world. To be successful he should be familiar with commercial methods."

AMERICANS HAVE BEST CHANCE FOR LEADERSHIP

Dr. F. W. Shepardson Regards Public Opinion as Controlling Factor in Life of Nation

"Never before have American young men and women had the chance that they have today to become world leaders of the coming generation," declared Dr. F. W. Shepardson, professor of history in the University of Chicago, in an address, "Some Directing Forces in Public Opinion," before the student assembly Tuesday morning.

"Where are the future poets, chemists, thinkers, dreamers, philosophers, writers, to come from?" asked Doctor Shepardson. "Not from Europe. The future leaders there are dead, dying, blind, crippled or possibly maimed for life. The trenches of the warring nations are claiming Europe's best. We must look to America for future leaders."

"Public opinion is the great controlling factor in American life. The rulers of this nation are chosen by the voice of the people, and the voice of the people is the voice of God."

"The United States has long been called the melting pot of the world. The outbreak of the European war showed that the melting pot had become a danger."

"Public opinion will decide the case of national woman suffrage. A victory of national prohibition has been prophesied for the year 1920. Time will show the wisdom of this prophecy. Public opinion will be the deciding factor."

POULTRY SCHOOLS WILL REPEAT SUCCESS IN 1917

Division of Extension Is Arranging Dates for Season's Work

Two-day poultry schools such as proved a success in 1916 will again be conducted this year by the division of extension of the Kansas State Agricultural college. Poultry breeds and breeding, incubation, housing and marketing, and feeding are subjects emphasized in the course.

Several requests already have been made for dates. Persons wishing to organize schools should correspond at once with the division of extension.

LYON COUNTY GIRL WINNER OF FIRST POULTRY PRIZE

Scott and Rice Counties Take Remaining Awards in Contest

Miss Mary Griffith of Lyon county has been awarded first prize in the annual poultry contest for 1916, open to members of boys' and girls' clubs. Her profit was \$10.30 on 44 chicks hatched from 45 white Wyandotte eggs from purebred stock.

Miss Helen Spaulding and Harvey Russell of Scott county won second and third places respectively. Everett Reed and James P. Evans of Rice county won fourth and fifth places. Of the five state prizes awarded last year in the poultry contest, Scott county boys and girls captured four and Lyon county one. This year Scott county got two prizes, Rice county two, and Lyon county one.

Each contestant is required to keep an accurate account of time spent in the enterprise and also of the expense and profit. These records are then considered by the judges in determining awards. The contest is in charge of Otis E. Hall, state leader of boys' and girls' club work, division of extension, the agricultural college.

Home management may keep pace with farm management and even business management, if we women will willingly do our best to follow the plans and ways devised for us.—Alice S. Hickman.

CLUB WORK IS POPULAR

MORE THAN 5,000 BOYS AND GIRLS IN KANSAS ORGANIZATIONS

Glenwood Mother-Daughter Canning Club Received First Honors for Work in 1916—Pig Club in Atchison County Ranked Second

More than 5,000 boys and girls were enrolled in agricultural club work in Kansas in 1916. Otis E. Hall, director of junior extension work in the Kansas State Agricultural college, has charge of the club work.

The Glenwood mother-daughter canning club of Leavenworth county excelled in number of honors won both in and outside the state. This club canned more than 11,000 quarts of fruits, vegetables, and meats and has been awarded championship honors for the state. A pig club in Atchison county ranks second, one of its members being Walter Earl Delfelder, state champion pig feeding contestant, whose Poland-China pig gained 275 pounds in 132 days at a cost of only a little more than 5 cents a pound.

MORE GIRLS THAN BOYS

The corn club is usually the banner club project but owing to dry weather last season many of the boys lost all their corn and few of them finished the year with good yields or profit. The high cost of living had much to do with the popularity of the canning clubs.

The club work is in 12 divisions—sorghum, poultry, pig, potato, tomato, square rod gardening, gardening and canning, mother-daughter canning, breadbaking, sewing, and handicraft. The average age of members enrolled is between 14 and 15 years. The age of eligibility is from 10 to 18 years. Two hundred more girls are enrolled than boys.

CLUB WORKERS MAKE GOOD

"The club work is a great thing for Kansas boys and girls," said Otis E. Hall, director of junior extension work in the agricultural college. "It keeps them interested and contented on the farm, and by cooperating with their parents they build up community ideals and become interested in public work. Past records show that the club workers usually make good whether they remain on the farm or go to college."

"This cooperation of public spirited citizens has done much towards making the work a success. Farmers' institutes, banker community centers, and interested private individuals have done much to build up the work and make it permanent."

DON'T TRY TO PRUNE FOR SEVERAL YEARS AT ONCE

A Little Work at Brief Intervals Is Desirable Plan, Says Forester

A little judicious pruning each year is more desirable than attempting to correct the shape of a tree by severe pruning after it has been neglected for several years, points out Charles A. Scott, state forester.

"The object of pruning is to remove the diseased and dead portions of the tree," said Mr. Scott, "and it must be kept in mind that low branches on a shade tree are objectionable. A straight trunk clear of limbs for 10 or 12 feet is always desirable."

"Small limbs may be pruned at any convenient time but the larger limbs should be cut off with a saw in the early part of the winter. The wounds should be painted immediately with some antiseptic paint to prevent infection from spores. Some of the paints used are asphalt, coal tar, and white lead. The mineral paint is the least effective as it does not penetrate the pores of the wood."

In pruning evergreen trees, the limbs should be allowed to grow from the ground, according to Mr. Scott. The only pruning necessary is to clip off the dead and broken limbs. Ornamental trees should be allowed to grow naturally, and pruning is justifiable only when some formal shape is desired. In case the trees are growing near the house and shut out the light, the branches may be cut off to any height.

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Number 17

MOSES HAD BEST PLAN

PRESIDENT WATERS COMMENDS LAWGIVER'S FARM SYSTEM

Tenancy Problem Fails to Get Deserved Attention in America—Speaker Points Out Evils in Present Agricultural Situation

The tenancy problem in America demands serious consideration, in the opinion of Dr. H. J. Waters, president of the Kansas State Agricultural college, who spoke on "The Landlord and His Tenant" before a Farm and Home week audience Tuesday morning. Moses, in ancient times, had the best system in dealing with the problem, while the United States has few plans of any sort for dealing with the situation.

"Americans get excited over the increase in tenancy every time a new census is taken and it is well that this is the case," said Doctor Waters, "because of the evils of our system of farming.

BACK TO ANCIENT DAYS

"It is a mistake to assume we are the first people to have to meet this sort of problem. The fact is that tenancy dates back to the beginning of the established order of agriculture, before man used typewriters for writing farm leases or fountain pens for signing them.

"The earliest leases of which there is record were written in clay and sun dried, and the signature made by thumb nail impressions, but the terms of the leases were exactly the same as those of today—one-half the crop when the oxen and seed were furnished by the landlord and one-fourth to one-third when the tenant furnished the seed and the work animals.

AS MOSES ESTABLISHED IT

"Moses established the best system of land ownership that has been known, intended definitely to prevent land monopoly and to keep farms the size that would be best for everybody. One important provision was that the land belonged to the Lord and the one who tilled it held it for a rental of two tithes to support the priesthood, which had no land, and one tithe for the public welfare. The tenant could hold this land only 50 years at most or until the year of jubilee, when all contracts ceased and all debts were cancelled. If we redistributed the land now once every 50 years, we should hear little complaint of oppressive landlordism."

Long experience has shown that the system of land tenure which best saves the land from excessive wear and waste is for it to be tilled by the owner, pointed out Doctor Waters. Even greater protection was afforded to the soil under the old Jewish system whereby the land was considered to belong to God and it was sacrilege to despoil it.

DEALING WITH TENANT PROBLEM

Moses was a believer in small farms tilled by the owner. Gradually this system broke down, estates became larger than the owner could cultivate to advantage and a system of landlordism and tenancy again came in.

"There have been four ways of dealing with the tenant problem in the past," said President Waters. "Germany stepped over from the feudal system to the system of small farms without the intervention of landlord and tenant and as a result it may be truthfully said that Germany never had a real tenant problem. This is the only conspicuous example of preventing tenancy.

"France broke down the system of land monopoly and tenancy by means of the French revolution and the long years of readjustment following, and as a result France today practically has no tenancy problem, but instead one of the most prosperous and suc-

cessful land owning systems of agriculture in the world. Denmark accomplished the same result more recently without bloodshed.

NEW ZEALAND PREVENTS TENANCY

"New Zealand is an example of a nation that thus far has prevented tenancy. The motto of her nation is, 'The land for the people,' and a system of graduated taxes makes it unprofitable to hold land not tilled. In other words, New Zealand has taken all speculative values out of land.

"Great Britain stepped from feudalism to tenancy and instead of trying to break it up, accepted and regulated it. As a result, Great Britain has the best regulated system known in the world."

The United States, Doctor Waters showed, has done nothing to prevent and almost nothing to regulate tenancy. In Great Britain nine out of 10 of the farms are tilled by tenants—in the United States about four out of 10, in France one out of ten. In New Zealand the number is negligible. The problem of readjusting a system of land holding in which three-fourths of the farms are tilled by the owners is a difficult one, and in a democracy, such as ours, is perhaps a good ways ahead of us.

TENANT IS A CROP FARMER

"In general the tenant has been a soil robber and waster because he has less interest in the land than if he owned it and because he is as a rule a crop farmer and not a live stock man," said Doctor Waters.

"In America the tenant has wasted the soil more rapidly than in any other country because he has been provided through American invention and genius with tools and machinery by which he can till more land than any other tenant and because under our system of short leases we encourage the most destructive system of farming known in this country or in any other country.

"English farms are tilled almost wholly by tenants and yet English soil has steadily increased in fertility during the last 100 years. Live stock farming has reached its highest development in England on farms tilled by tenants.

"RENTED" MEANS "RUN DOWN"

"A rented farm in this country means a run down farm. It is a farm with poor buildings, few fences, and no conveniences. The tenant could not, if he would, keep live stock. He couldn't afford to rotate crops and intersperse alfalfa, clover, and cow peas with corn, wheat, and oats, even if he wanted to do so. He will not be there next year. What difference does it make to him how much the fields are washed or worn through carelessness and neglect?"

"Generally, successful men who have been able to accumulate a competency move to town. They know the soil of their farms as no one else knows it. They usually take an active interest in the management of the farm by the tenant, encourage him to get good seed, help him plan his cropping system and his work so that the land is well prepared and the seeding done on time.

WHEN OLD LANDLORD DIES

"But in the course of time this experienced farmer and landlord passes away and the farm is divided among the heirs, one of whom is likely to be the local banker, another the superintendent of schools in a city 100 miles away, and the third, the wife of the pastor of the church in another county or of a local merchant, lawyer, or physician.

"These new proprietors know little about farming except what they remember of their earlier farm experiences, and they are absorbed with

(Concluded on Page Four)

COME FROM 80 COUNTIES

MORE THAN 1,000 ALREADY HERE FOR FARM AND HOME WEEK

Many Hundreds More Will Arrive Before Sessions End—Program Is Unusually Strong—Road and Rural Life Meetings Attract Interest

More than 1,000 Kansas farm people from 80 counties are in Manhattan for Farm and Home week and this number is expected to be increased by several hundred before the end of the week. Registration began Monday morning and the meeting will continue until Friday evening.

The program is adjudged the strongest in the history of this annual event. In addition to competent agricultural college specialists, many speakers of national reputation are on the program. Every minute of the time is being occupied. A special program of interest to women was provided, and the boys and girls were not neglected in the general plan.

BOYS AND GIRLS IN CONTESTS

Lectures and demonstrations in agriculture, farm engineering, and home economics are being given, while entertainment features furnish the necessary recreation. Dairy and horticultural displays are attracting attention. Boys and girls are competing in special contests.

Among the speakers from other states are W. W. Burr, professor of agronomy, University of Nebraska, Lincoln, Neb.; N. H. Vinall, forage crop investigations, United States department of agriculture, Washington, D. C.; Dr. Warren H. Wilson, Columbia university, New York City; Dr. Edwin L. Earp, Drew Theological seminary, Madison, N. J.; John Clay, Chicago, Ill.; F. R. Marshall, sr., animal husbandman in sheep investigations, United States department of agriculture; John B. Irwin, farmer, breeder, and owner of the world's champion cow, Minneapolis, Minn.; J. M. Evvard, assistant chief in animal husbandry, State college, Ames, Iowa; and Mrs. Louise H. Campbell of the extension service, State college, Ames, Iowa, and Louise Aveline of Nogent, France, Percheron breeder.

KANSAS ASSOCIATIONS MEET

The annual meeting of the Kansas Swine Breeders' association was held Tuesday afternoon in connection with Farm and Home week. F. B. Caldwell of Howard read a paper on "The Business of Selling Purebred Swine." J. M. Evvard of the Iowa State college spoke on "Feeding the Purebred Pig." E. N. Wentworth, professor of animal breeding in the college, discussed the subject "Inheritance of Size of Litter in Swine."

The Kansas Crop Improvement association held an all day session Tuesday. W. W. Burr, professor of agronomy in the University of Nebraska, spoke on "Cultivation to Conserve Moisture," and "Most Profitable Crops." H. N. Vinall, office of forage crops, United States department of agriculture, read papers on "Forage Sorghums," and "Sudan Grass." L. E. Call, professor of agronomy in the Kansas State Agricultural college, discussed "The Factors Influencing the Yield of Wheat." Ralph Kenney, assistant professor of crops, read a paper on "Pasture Management."

HIGHWAY AUTHORITIES ARE HERE

The Kansas State Dairy association, and the Kansas Sheep Breeders' association will meet today, the Kansas Improved Stock Breeders' association Thursday, and the Kansas Horse Breeders' association Friday.

The second annual road school started Monday, February 5, and will continue until Friday eve-

ning. The meeting is attracting much attention, many county engineers and farmers being present. Road authorities from Illinois, Iowa, Oklahoma, and the government office of public roads are among the speakers.

RURAL LIFE CONFERENCE CONTINUES

The sixth annual rural life conference, which opened early last week, will continue until Thursday evening. More than 50 persons particularly interested in rural problems have been in attendance. Prominent speakers for the conference are Dr. Warren H. Wilson, superintendent for rural work for the national board of home missions of the Presbyterian church, and Dr. Edwin L. Earp, professor of sociology in Drew seminary, and a member of the board of home missions of the Methodist church. Doctor Wilson is speaking on rural sociology, and Doctor Earp on rural church legislation.

Walter Burr, director of the rural service department of the agricultural college, is giving a series of addresses on rural leadership.

TWENTY PRIZES GO TO DOZEN COLLEGE STEERS

Two Championships and Nine Firsts Are Won at Unusually Strong Show in Denver

The animal husbandry department of the Kansas State Agricultural college exhibited at Denver three purebred Aberdeen-Angus, three purebred Hereford, three purebred shorthorn, and three grade Hereford steers. These cattle won two championship, nine first, four second, and five third prizes.

The Denver show this year was considered the strongest show, especially in the steer classes, that had ever been held west of the Missouri river.

AGGIES AND NORMALITES TIE IN ANNUAL DEBATE

College Loses Here but Wins at Emporia—Women's Contest with Ottawa [Next on Program]

In the dual debate between the agricultural college and the State Normal school Friday, the Aggie-negative team composed of T. R. Pharr of Manhattan, C. W. Howard of Colby, and H. H. Nelson of Wakarusa, won at Emporia. The Aggie affirmative team—Clyde Fisher of Lowmont, Ward Fetrow of Haddam, and Oscar Steanson of Manhattan—lost to Emporia here.

The next debate on the program comes Friday night, February 9, with Ottawa. This is a women's debate and the question to be argued is that of the unicameral legislature.

The affirmative team, which will go to Ottawa, is composed of Miss Blanche Sappenfield of Clifton, Miss Marie Johnson of Manhattan, and Miss Louisa Ziller of Manhattan. The negative team, which remains at home, is made up of Miss Ethel Arnold of Manhattan, Miss Lola Sloop of Boyle, and Miss Margaret King of Manhattan.

This will be the first of the three women's debates to be given here this season. The next one comes April 23.

FRENCH HORSE BUYER WILL TALK TO BREEDERS FRIDAY

Louis Aveline to Speak on Percherons in Two Countries

Louis Aveline of Nogent, France, will speak before the Kansas Horse Breeders' association at Manhattan Friday on "Percheron Horse Breeding in France and America."

Mr. Aveline, who has charge of all the French horse buying in America, speaks English fluently and is recognized as one of the greatest Percheron breeders of all time. Many Kansas horsemen are expected to avail themselves of the opportunity of hearing him.

WHY CROP YIELDS FALL

DECREASE DUE TO LACK OF PROPER SYSTEM, SAYS AGRONOMIST

Tests at Experiment Station Show Importance of Rotation in Growing Wheat and Corn Successfully—Plans Differ in Various Sections

The average yields of general farm crops in Kansas have decreased rapidly, particularly in the last few years, largely due to the failure of farmers to adopt proper cropping systems, according to R. I. Throckmorton, associate professor of agronomy in the Kansas State Agricultural college, who spoke Tuesday morning before a Farm and Home week audience.

The great value of a rotation in maintaining the yields of wheat and corn has been strongly demonstrated at the Kansas Experiment station, pointed out Professor Throckmorton. A field that has been growing wheat continuously for the last six years gave a yield of 25.8 bushels per acre in 1911 and a yield of only 6.9 bushels per acre in 1916. A similar field which has been growing wheat in rotation with corn and cowpeas produced 15.8 bushels an acre in 1911 and 16.1 bushels in 1916. A third field which grows wheat in rotation with alfalfa and corn produced 18 bushels an acre in 1911 and 18.5 in 1916. In each case where wheat has been growing in rotation there has been a slight increase in yield, while the field growing wheat continuously is now producing only about one-fourth as much as in 1911.

CONTINUOUS CROPPING CUTS YIELD

The results with corn are also striking. A field growing corn continuously produced 28.2 bushels an acre in 1910 and 23 bushels an acre in 1916. Another field which has been growing corn in rotation with cowpeas and wheat produced 29.6 bushels an acre in 1910 and 42.3 bushels in 1916. The average yield of the first field for the seven year period was 22.8 bushels while the average yield of the second field was 28 bushels an acre.

"Cropping systems for various farmers and sections of the state must necessarily be quite different to meet the wide range of conditions," said Mr. Throckmorton. "The western part of the state must have a rotation based upon wheat as the principal crop and must also have some crop for forage purposes. Here is a proper rotation: fallow, wheat two years, followed by sorghum. Three years of wheat may be used instead of two. The rotation is arranged in such a manner that fallow will follow the sorghum crop, thus decreasing any ill effect the sorghum might have on the crop following it.

ROTATION FOR CORN REGIONS

"In sections east of the wheat belt and where alfalfa and corn may be grown successfully, a satisfactory rotation consists of alfalfa for a period of six to eight years, corn two years, and wheat one year. The first year of corn may be replaced by a sorghum crop where desirable.

"In the true corn belt of the state it is necessary to base the rotation on corn as the money crop. A rotation of corn, oats, wheat, clover, has been found to give good results. The corn may be grown for two or three years, depending on local conditions, and when the corn is harvested early, as for silage purposes, the oats may be omitted."

In view of the high prices of food-stuffs, farmers in the southern states are being urged to follow what is termed a safe agricultural program, comprising the raising of live stock and the growing of food crops as well as cotton.

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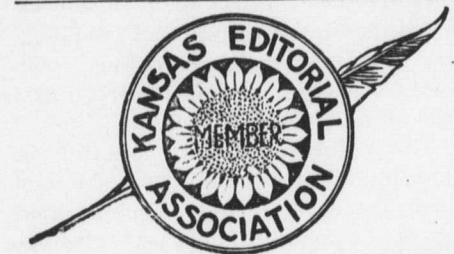
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J. D. WALTERS.....Local Editor
ADA RICE, '93, M. S. '12.....Alumni Editor

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WEDNESDAY, FEBRUARY 7, 1917

WHERE ORGANIZATION PAID

Kansas now has four cow testing associations in operation. This fact is sufficient evidence that they are successful and practical under Kansas conditions. The first association was organized in 1912 by the dairy department of the Kansas State Agricultural college and local men at Abilene. This association has been in operation for four years and has organized for another year's work.

The fact that farmers have kept this association running and have had such good results has made it possible to organize other associations. Three new associations have been organized and started during the past thirty days under the direction of the dairy department of the college. The Mulvane association started January 1; the Sedgwick and Harvey county association, with headquarters at Wichita, started January 2; the Montgomery county association started the latter part of January.

The dairy division of the United States department of agriculture furnishes record books for the members of the associations free of charge. It is possible that several more associations will be organized within the state in the next few months.

MAKING A SCHOOL INTERESTING

Quite the most interesting school publications that have come to hand in a long time are the catalogue and informative booklets of the Hampton Normal and Agricultural institute.

Founded on the ideal "a sound body, a trained capacity, and an unselfish outlook on life for every student," Hampton institute, situated at Hampton, Va., has completed nearly half a century of efficient service in educating negroes and Indians for profitable, self-respecting, and happy life.

The school is built on the basis of giving each student the general knowledge necessary to cope with life problems and of teaching him also a trade or other occupation. He learns the trade by actual practice, and is paid what his labor is worth. The school land is farmed, the live stock is cared for, buildings are repaired and erected, the necessary printing is done, by the students. "Labor," said General Samuel Chapman Armstrong, its first principal, "next to the grace of God in the heart, is the greatest promoter of morality, the greatest power for civilization. . . . Character is the outcome of the labor system. It is not cheap, but it pays."

The young men who come to the school have their choice of an academic-normal course—intended for those who want to teach,—an agricultural course, a business course, or a trade course in blacksmithing, brick-laying and plastering, cabinet making, carpentry, machine work, painting,

printing, shoemaking, steam fitting and plumbing, tailoring, tinsmithing, upholstery, or wheelwrighting.

The booklets deal with the trade courses. Strangely enough, they are fascinatingly interesting. The man who wrote them failed to realize, somehow, that every school publication ought to be prepared in language and figures that require an unabridged dictionary and a slide rule for their understanding. Nowhere does he state how many hours and minutes are spent in room 23 of building A X on Tuesday afternoons in the study of Trojan topography. He tells what the pupils and graduates really have done and really are doing, and illustrates his brief, attractive articles with illuminating pictures of the students at work.

What the school has done in a few trades is indicated in these brief statements:

"That the south offers young negroes an opportunity to succeed in the tailoring business is clear from the fact that many of the Hampton tradesmen have received, without difficulty and without prejudice, the patronage of some of the very best southern white people."

"The bulk and variety of one year's work in printing are suggested by the following figures: pamphlets (amounting to 4,746,764 pages), 192,000; envelopes, 217,800; letter, note, and bill heads, 75,000; programs, 35,000; circulars, 80,800; cards, 125,000; blanks, 291,500; receipts and orders, 133,800; total number of pieces of printed matter, well over 1,000,000."

"The farm hand, the newsboy, the drugstore porter, the stable hostler, the bellboy, the waiter—all these types and many others have come under the influence of the Hampton institute trade school course in plumbing and steam fitting. . . . They have gone forth, not only as apostles of industrial education, but also as messengers who have carried the gospel of better homes, schools, and churches, the gospel of a new and richer life for backward classes and communities."

Hampton institute, one may remark confidently, will attract more and more interest, not only because it is doing interesting, effective work, but also because it has shown the judgment to employ a publicity secretary who knows what people like to read.

LESS RISK IN FARMING

The growth and importance of agriculture in the southwest largely will depend upon the live stock industry in this part of the country. There will be years when crops are large and markets satisfactory; there will be other seasons which for various reasons farms will not be as remunerative as the managers have reason to expect. This has been the history of cropping everywhere so far as we know. The same will be true of other business more or less dependent upon farming.

But with more and better live stock farming will be more profitable and all business prosperous as a result of greater production on farms. By raising animals of the right type and of the proper kind risk will be reduced to a minimum. The manager that invests in breeding animals and equipment will need more capital than where crops only are grown, but these investments if properly made and carefully managed will bring in better profits and place the business of farming upon a safer basis.—Farm and Ranch.

COUNTY AGENTS IN OHIO

Ohio now has 18 counties with agricultural agents. During the past year six counties have been organized, while 48 other counties have engaged in various degrees of discussion, organization, and preparation. This makes 66 counties out of the total of 88 in which active interest is taken in the county agent movement.

The state university is making every effort to meet promptly the effort that is initiated within the several counties. One requirement of the work in Ohio is that no county may secure an agent until the proper organization work has been done within the county.

There are two reasons for this: First, it is an assurance that the farmers of the county have a genuine desire that a county agent shall be appointed. Second, it guarantees that when the agent takes up his work there will be an organization to back him and to which he may go for assistance in the work of organization and general effort.

The university does nothing to stimulate interest in this work. That period has passed and the main effort now is to manage the work so that it will not grow too rapidly, and so that none but wise appointments will be made.

No county has discontinued the work during the past year.

The county organization must contain a membership equal to 10 per cent

at the rate of something less than an inch an hour, the old fellow will have ample time for cogitation before he again seeks the sunlight.

This time it is Professor Mason who is called. He has the tender of the chair of horticulture in Texas Agricultural college, at a salary of \$1,500, with house; but on the supposition that he will soon be better rewarded for his labor here, declines.

F. A. Waugh, '91, declines a recent offer of the associate editorship of the American Agriculturist, to continue his work on the agricultural department of the Kansas Weekly Capital, "with an increase of salary and brighter prospects all around."

Assistant Entomologist Marlatt has a fine collection of negatives from

A World Reborn

R. P. McColloch before the Students of the Kansas State Agricultural College

THE world is all aflow with blood. From crests of many hills giant guns flash and flare and send down their hail of death. On plains below great armies grapple and engage in death struggle. In all the air huge birds, of man's making, drop darts of steel and balls of fire that wound and kill. On all the seas boats, wonderfully devised, speed beneath the waves and send hurtling to the hulls of giant ships the darts that ear and open up such wounds that the ships go down; so that thousands find graves in the waters of all the oceans. And famine stalks through all the lands aflame with war. And cities are consumed by fire and sword. Magnificent buildings, in which are stored the best of the art of all ages, fall before the weapons of modern warfare. There are no harvests save the harvest of death. Everywhere men, women, and children cry out for a bit of bread. Everywhere are the wounded and dying; and the pity of it is that, while in life they followed different flags, in death they all kiss the same cross. The world is either in the throes of dissolution or in the agony of a new birth.

I am firm in the belief that the world is being born again. In this new world there will be an enlargement of the principles of fraternity, brotherhood, service. There will be great changes in economic and industrial life. There will be vaster fields of science to explore. There will be, in every field of labor and endeavor, new problems to be solved, new and fascinating questions to engage heart and mind. I charge you to get acquainted with your world, to fit yourselves here and now for the work that will be yours to do in the years to come all too swiftly. I charge you to compel your new world to recognize you, as you may by fitting yourselves now to take your proper places in that world. I pray you to be thoughtful and earnest, determined, strong, efficient, hopeful, so that you may go out from here to live lives of such usefulness and unselfish service that your world will note and appreciate.

of the number of farms in the county. The funds to operate the work are furnished by the state and federal governments, and the county commissioners may (but are not compelled to) furnish \$1,500 per year to support the work. In every county where the work is established the county commissioners have been fair and liberal. It is wise that the appropriation of the funds by the commissioners is optional because it compels the association to show good reason for such appropriation. The county agent system in Ohio is growing steadily and not too fast. The county agent is making good. The farmers are learning to utilize him.—Ohio Farmer.

A QUARTER CENTURY AGO

Items from The Industrialist of February 6, 1892

J. Van Everen donates to the museum a large natural graft of oak.

M. A. Carleton, '87, the newly elected assistant in botany, is expected next week.

F. O. Popenoe of Topeka visited with his brother, Professor Popenoe, on Wednesday and Thursday.

Miss Abbie L. Marlatt, '88, writes from Utah Agricultural college of feeding 68 visiting legislators to their entire satisfaction on very short notice.

Tuesday was an ideal "groundhog day"—for the hog. Judging from present indications, with snow falling

which he is printing photographs of insects of various kinds for use in illustrating forthcoming bulletins of the station. The prints appear to be well-nigh perfect, and will make good copy for the engraver.

In the public lecture yesterday afternoon, President Fairchild treated the subject of "Coin and Currency." The history of coinage was traced from the time of the ancients to its perfected condition of today. Many interesting facts concerning the country's monetary system were presented in an attractive way.

The museum has received a fine golden eagle from F. V. McCord of Manhattan, and through William Morrison a specimen of the diamond backed, or edible, terrapin from J. B. McNeal of Baltimore, Md. The specimens (Virginia deer, wild turkey, and opossum) collected by Secretary Graham and Mr. Breese have been mounted, and are awaiting a place in the case.

The Manhattan Horticultural society will meet in horticulture hall Thursday, February 11, at 2 o'clock p. m. Officers will be elected for the ensuing year. The program will be as follows: "Winter Work for the Horticulturist," W. J. Grifing; "Preparing and Planting Hotbeds," William Baxter; "Strawberry Notes from the College Grounds," S. C. Mason; "Experience with Strawberries in Manhattan," William Shelton.

THE WOMEN OF THE WAR

Ethelwyn Dithridge in the New York Times

Afar amid war's darkness, they suffer and grow strong,
For courage is their garment, and hope their evensong;
They hide the pain of parting with "Till we meet again,"
Or greet with tender welcome their bruised and broken men.
They give their all ungrudging, nor think it much to give;
They see their lives in ruin, then face the years, and live.

O heart of selfish sorrows and unavailing fears!
One day of their devotion were worth my idle years.
With uncomplaining patience their sacrifice is made—
So, though in lesser service, my debt of love were paid.
Take thou, beloved country, the little all I give,
Who am not born to greatness, and yet would greatly live.

SUNFLOWERS

Our wife says that we can't go to war.
Some fellows never do get any rest.

Egg on the chin is now prima facie evidence of amenability to the income tax.

We always feel sorry for the girl who is ugly enough to win a beauty contest.

It is best not to have a thermometer these cold mornings. The truth will make you freeze.

We sincerely trust that Mr. Bernstorff will not forget his passports—or his profits from the "leak."

Personally, we doubt if a torpedo would come near a ship on which a ukelele orchestra was in action.

A news note informs us that the port at Seattle is amply protected by a tug armed with a three-pound gun. This should be sufficient warning to Japan.

One of the Manhattan choirs resolved itself into a line party the other night and saw a five-reel thriller entitled "The Devil's Needle." There is some discussion as to whether it is a point in their favor.

THOSE WHO DWELL REMOTE

We who live huddled by millions in cities or scattered in other millions over areas vast yet connected community with community by railways, mail, and the telegraph, give little thought to those others in remote and isolated parts unless our interest be momentarily fixed by some incident related to them. Such an instance is an announcement by a steamship firm in New York city that one of its boats will sail December 23 for Australia and that a stop will be made at Pitcairn island. An appeal was made for any books or magazines which could be spared as gifts for the residents of this faraway speck on the ocean's breast.

These people, the descendants of the mutineers of the Bounty, have no neighbors nearer than 500 miles. They are led by a missionary and are all well instructed in Bible lore. Their means of existence are most meager and we are told that they are in need of garments and reading of the standard class.

At the same time we read in a London newspaper of a steamship going out of its course to touch at Tristan da Cunha, which is as isolated in the Atlantic as Pitcairn is in the Pacific. On this rocky islet a small community, devout, like the other, exists. The adults number only twenty-six. They descend from a few hardy sailors who chose the place 150 years ago. They begged the steamship captain to appeal to England for a teacher for their children. Before the war a British cruiser called there once a year, but since August, 1914, they had been without news of any sort. Neither they nor the Pitcairn islanders evince any desire to emigrate. Remote, solitary, and alone, these dwellers on the seas regard their island homes as preferable to what they have heard of the rest of the world.—Chicago Tribune.

AMONG THE ALUMNI

W. C. Meldrum, '14, is engaged in live stock farming near Cedarvale.

C. A. Hooker, '15, is in the Detroit (Mich.) office of the Westinghouse Electric company.

Miss Mabel Bennett, '15, writes of her enjoyment of her work in Columbia university, New York city.

J. J. Abernethy, '16, is teaching in the Prairie View State Normal and Industrial college, Prairie View, Tex.

Miss E. June Milner, '14, is managing the Young Women's Christian association cafeteria at Beaumont, Tex.

Miss Clara King Morris, '11, is in the extension department of the Michigan Agricultural college, East Lansing, Mich.

A. H. Ganshird, S. G. Fell, and L. V. Fickel, all of the class of 1915, are employed by the Westinghouse Electric company at Pittsburgh, Pa.

Mr. P. K. Symns, '01, and Mrs. Helena (Pincomb) Symns, '01, are living near Atchison, where Mr. Symns runs a general farm.

A. B. Symns, '98, is engaged in general farming and stock raising near Troy. His sister, Mrs. Isabel (Symns) Reeder, who was a student in the college from 1895 to 1897, lives in Troy.

Ralph Shelly, '15, and Ray Baldwin, '13, are engaged in general farming near Atchison. Mr. Shelly is doing considerable with fruit while Mr. Baldwin is working with dairying.

F. R. Rawson, W. W. Hervey, H. D. Linscott, T. R. Knowles, and J. S. Hagan, members of the class of 1916, are taking the apprentice course offered by the General Electric company.

W. E. Stanley, '12, is investigating the loss of head in the flow of water in pipes, bends, valves, and commercial fittings, and hopes to publish his results in the near future. He is instructor in hydraulics in Purdue university.

H. R. Sumner, '16, is taking graduate work in the University of Missouri. The Kansas State Agricultural college, he writes, stands well both in scholarship and in athletics in the minds of Missouri people. Mr. Sumner expects to be present at the June commencement of the college.

Miss Marcia Turner, '06, is in her second year as director of domestic arts in the public schools of Port Arthur, Tex. She writes enthusiastically of her work and of her life in the south, but she says: "I have just finished reading THE INDUSTRIALIST and the Republic so feel quite 'carried back.' Today the thermometer stood above 70 degrees all day—of course it is almost time for spring here—and I have found myself planning about going home in June."

MARRIAGES

HOLLINGSWORTH-GADEN

Miss Mildred Hollingsworth, '15, of Lincoln, Kan., and Mr. H. C. Gaden, '14, of Seiling, Okla., were married December 6. They are living at Seiling, where Mr. Gaden is farming.

Miss Jennie H. Brown, '14, of Logan in sending her Alumni association dues, writes:

"I am very glad to note the increasing strength of the Alumni association and I think the student loan fund a splendid movement."

"THE INDUSTRIALIST holds a great charm for me. I watch eagerly for its arrival."

BIRTHS

Born, to Mr. Harry E. Totten, '10, and Mrs. Carrie (Harris) Totten, '10, on January 28, a son, Richard Earl.

Born, to Mr. E. H. Dearborn, '10, and Mrs. Gladys (Nichols) Dearborn, '10, Manhattan, on January 27, a daughter, Ermal.

Born, to Mr. Ross Newland, '06, and Mrs. Newland, Brooklyn, N. Y.,

on November 23, a daughter, Helen Marie.

COACH WINNING TEAMS

C. A. Patterson, '14, and J. V. Quigley, '16, coached the team which won the first two prizes in the grain judging contests at the Oklahoma Agricultural and Mechanical college.

Mr. Patterson's team, representing the Connell State School of Agriculture at Helena, won first place in the agricultural school division. In the high school and consolidated school division, the Guthrie high school team, coached by Mr. Quigley, was placed at the top. This team was composed of young women and competed against young men.

ALUMNI MEET IN BROOKLYN

Kansas State Agricultural college alumni and friends had an informal party Saturday evening, January 20, at the home of Mr. and Mrs. L. A. Ramsey, '06, Brooklyn, N. Y. A very enjoyable evening was spent.

Those present were Mr. A. L. Burns and Mrs. Ruth (Gilbert) Burns, '14; Mr. John B. Dorman, '96, and Mrs. Dorman; Prof. and Mrs. Edwin L. Holton; Mr. and Mrs. L. A. Ramsey, '06, and son, Lloyd; Mrs. Christine (Hofer) Johnson, '02; Miss Wilhelmina Spohr, '97; Miss Minnie Copeland, '98; Miss Alma Halbower, '14; Miss Mary Parsons, '11; Miss Lulu E. Stallmann, '12; Miss Florence Wyland, '11; Miss Martha Pittman, '06; Miss Avis Voak, '16; and Mr. Ross Newland, '06.

DEATHS

LETHE MARSHALL

Miss Lethe Marshall died January 11 at Denver, Colo., where she had been taken in hopes that the climate might benefit her health. She was a sophomore in college when illness prevented her further attendance.

She is survived by her father and mother, Mr. and Mrs. Alvin Marshall, 910 Moro St., Manhattan; four sisters, Mrs. C. M. Gordon, Ashburn, Ga.; Mrs. C. B. Gile, Creswell, Ore.; Mrs. C. A. Patterson, '14, Helena, Okla.; Mrs. John H. Anderson, '14, Topeka; and two brothers, William J. Marshall, '14, Boston, Mass., and S. S. Marshall, Manhattan.

Mr. and Mrs. William J. Marshall and Mr. and Mrs. John H. Anderson came to Manhattan to attend the funeral, which was held in the First Methodist church, January 15.

BOOSTING FOR THE NORTHWEST

Miss Pauline Clarke, '14, is living in Mount Vernon, Wash. She writes:

"I have been in Washington since October and already feel like a westerner. This is certainly a wonderful country and I am anxious to see the spring, for 'the natives' tell me it is even better at that time. I live within view of the mountains, and even the hills are wonderful. This town is built around the Skagit river, which reminds me in many ways of the Kaw; but it is different in that it has real boats going up and down all the time. The bridges are built so that they open up and let steamboats pass through."

"I little dreamed when I used to go hiking around the hills near Manhattan that I would ever live in one of the towns where Carnation condensed milk 'is grown,' that we used so freely in our coffee and called 'cow.' There are large condensaries here and most of the farmers have herds of dairy cows and sell milk to the condensaries. This valley is often called the 'Belgium of America,' and they claim for it that it is the most fertile in the United States."

"We have a union high school here of almost 300 pupils. I like my work very much and find the Washington people very hospitable and kind."

"Mount Vernon is not far from Seattle and I have visited there several times. It is one of the best lighted cities in the United States. You see I am already boosting for the west."

IN MEMORIAM

ANNA MONSCH ROBERTS

Anna Adele Monsch Roberts, wife of Herbert F. Roberts, professor of

Botany at the Kansas State Agricultural college, was born August 26, 1870, at Louisville, Ky., fifth in a family of nine children. Her father, Henry J. Monsch, a prominent business man of Louisville, and her mother, Mary E. Brayman, were both of German parentage. She received her early education at the Louisville public schools, graduating from the girls' high school of that city in 1889, with honors, and later from the Louisville City Normal school.

In the spring of 1891, Miss Monsch in a competitive examination won the Vassar scholarship for the state of Kentucky, and in the fall of that year entered the freshman class at Vassar, graduating four years later in the class of 1895, with class honors and Phi Beta Kappa. Having specialized in biology, and having shown distinction in her work, she was appointed to a fellowship at the Marine Biological laboratory at Woods Hole, Mass., which appointment she held for three summers. The year 1895-1896 was spent in graduate work at Vassar, and she received the degree of master of arts in the spring of 1896. Miss Monsch then received the appointment as head of the department of biology of the girls' high school at Louisville, which position she held until the year of her marriage.

In the summer of 1899 she was enrolled in the graduate school of the University of Chicago, doing special work in bacteriology. On June 27, 1900, she was married in Louisville to Herbert F. Roberts, then instructor in botany in Washington university, St. Louis. During the following year Mr. and Mrs. Roberts lived in St. Louis, coming to Manhattan in March, 1901, at which time Mr. Roberts received the appointment to the professorship of botany in the Kansas State Agricultural college.

During Mrs. Roberts' sixteen years of residence in the college community, she was an active, sympathetic and influential participant in the college activities. During the last year she was president of the College Social club, a large organization comprising all of the faculty women and wives of the members of the staff. Her intellectual ability, high training, culture, lofty ideals, and beautiful character, enabled her to give an uplifting and ennobling stimulus to many lives. Her home life was ideal, and she was a rare and lovely wife and mother. Three children were born to her, Kenneth Lindsey, Edward Sherrill, and Richard Monsch.

On Tuesday, January 23, Mrs. Roberts was suddenly taken ill, and despite the most expert medical surgical aid, after a week's severe and exhausting illness, accompanied by two operations, she passed into the other life at 8:30 o'clock Tuesday morning, January 30. The funeral took place Thursday afternoon at three o'clock at the family residence.

The place occupied by Mrs. Roberts in the life of the college and the town can never be filled by another. Interested in every movement toward individual or social betterment, ready to give her ability, her ideals, and her deep sympathy to every worthy cause, respected, admired, and loved by friends in every walk of life, she will be missed as few persons could ever be, though her life will continue to furnish ideals and inspiration.

COPIES OF COLLEGE SONG

Kansas State Agricultural college alumni organizations may have copies of the college song, "Alma Mater," for use at reunions and other occasions upon application to the department of industrial journalism and printing of the college. Both words and music will be supplied without charge. The department should be notified some time in advance of the date when copies of the song are desired.

NEW STUFF GETS PUBLIC

MAGAZINES AND NEWSPAPERS 300 TIMES AS ATTRACTIVE AS CLASSICS

Prof. J. W. Searson Presents Statistics Showing Modern Tendency to Read Current Literature—Urges Teaching Appreciation

SEARSON ON READING

"The average red blooded boy would read wholesome literature as cheerfully as he catches fish if he were taught right."

"Foxy Grandpa, the Katzenjammer Kids, and Mamma's Angel Child harm the child less than many movies and premature sex instruction."

"All literature is the literature of common life."

"The teacher must read the best in newspapers and magazines. These publications should be in every schoolroom."

"The present demand is for individuals with stiff backbones and positive ideas."

The public spends more than 300 hours in reading magazines and newspapers for every hour spent in reading the approved standard classics, according to J. W. Searson, professor of English in the Kansas State Agricultural college, before the Southeastern Kansas Teachers' association at Chanute Friday. Professor Searson urged that pupils be taught to read newspapers and magazines with discrimination.

"College students spend 191 hours in reading magazines and newspapers for every hour spent in reading classics outside the college course," declared Professor Searson, "while their parents, according to the best available estimates, spend 897 hours on current reading to one on the classics. From 10,000 estimates received, the average person spends 8½ hours in reading modern fiction, and 310½ hours in reading newspapers and magazines for every hour spent in reading the classics."

WILL AVOID THE TRASHY

"From the colored supplement to the editorial page, the pupils should be taught to read with discrimination. If guided properly, children soon learn to avoid the cheap and the trashy and to read the charming, the interesting, and the true."

"Less harm comes to children from laughing innocently at the pranks of Foxy Grandpa or the Katzenjammer Kids, or from enjoying Mamma's Angel Child than from seeing many of the censored movies or from receiving premature sex instruction."

GO FROM NEW TO OLD

"The best books, newspapers, and magazines should be in every schoolroom. With proper instruction, the pupils may be led easily and naturally from an appreciation of the best current literature to a love for the world's greatest classics."

If the world today ceased to produce foodstuffs the race would starve in less than three years, but if no more literature, music, or art were produced we would still have a million-year supply, pointed out Professor Searson.

LITERATURE IS SOCIAL PRODUCT

"All literature," said Mr. Searson, "is the literature of common life, for literature is one of the world's greatest social products. By means of writing and printing the race has stored up for the use of every individual the best that has been produced in common. Society, therefore, owes it to every child to give him the key whereby he may unlock the great storehouse."

"The child must be trained to read with appreciation. The average red-blooded boy would read wholesome literature as cheerfully as he chases butterflies or catches fish if he were taught right."

LET CHILD BE DISCOVERER

"In literature, as in nature, he must be permitted to discover things for him-

self. He can best discover the heart of the great common life he is to live in the literature in which that life expresses itself. If he is not permitted to know life through rimes, jingles, fables, stories, poetry, and wholesome tales of fun, romance, and adventure, he will seek to know it from vulgar associates or, what is worse, from the lurid dime novels or 'penny dreadfuls.'

TEACHER MUST APPRECIATE BEST

"The teacher must read the best in magazines and newspapers and must know and appreciate the best in the literature of common life. Then her enthusiasm will be communicated to her pupils. The teaching of reading with appreciation in the public schools is the basis for developing a wholesome appreciation of the literature of common life."

Mr. Searson illustrated his talk by means of a number of literary selections interpreting the good, the bad, the courageous, the wholesome, and the true in common life. He read, in closing, Kipling's "Tomlinson" as an interpretation of the present demand for individuals with stiff backbones and positive ideas.

AGGIE FANS PREDICT VALLEY CHAMPIONSHIP

Victory Over Jayhawkers Puts Clevenger Men in Running for Title—Washington this Week

Kansas Aggie basketball prospects have soared and now a Missouri valley championship is predicted by local enthusiasts. Four times the Crimson and Blue quintet met the Jayhawker team. Twice Kansas came off victorious and twice the Clevenger men triumphed. The old Aggie fight was displayed in the last two contests in Nichols gymnasium and K. U. was clearly outclassed in both games, the scores being 36 to 9 and 31 to 29.

The Washington university team will play in Manhattan Friday and Saturday of this week. If the Aggies win both games they will have the edge on Missouri and Ames, as Kansas beat Ames two games, Missouri lost one and won one with Ames, and Washington lost two contests to Missouri.

SHEEP STAND AT TOP IN PROFIT ON INVESTMENT

Proper Management Will Eliminate Most of Flockmaster's Troubles, Says A. M. Paterson

Sheep will return a greater profit for each dollar invested than any other class of live stock, in the opinion of A. M. Paterson, instructor in animal husbandry in the Kansas State Agricultural college. For this reason Kansas farmers should give more attention to the sheep industry.

"None of the disadvantages, the most important of which are dogs, parasites, and disease, should discourage the flockmaster," said Mr. Paterson. "Proper care and management will control and largely eliminate these troubles. The flock that has to rustle for itself is the one that is hit the hardest by pests. With a little feed and attention, the sheep will be in a more healthy condition and return enough more profit to pay for the extra feed and attention."

"Sheep produce two cash crops a year—wool in the spring and lambs in the fall. They can be grown and maintained upon a greater percentage of roughage and a smaller percentage of grain than any other class of live stock. They will clean up the weeds from the farm and convert other rough feeds into a marketable product."

"As a source of fresh meat which is wholesome in character and flavor, a flock of sheep is the best. This fresh meat is the most healthful class of meat because fewer sheep are condemned than any other class of live stock."

Students in journalism and current event classes do most of the newspaper and other current literature reading done in colleges, according to Carl Holiday, professor of English in the University of Montana.

WILL BUILD UP KANSAS CATTLE BUSINESS ANEW

BLACKLEG IMMUNIZATION DISCOVERIES ARE EXPECTED TO REVOLUTIONIZE STOCK RAISING IN STATE—COLLEGE VETERINARIANS BRING PROFITS TO FARMERS FROM EXPERIMENTS

BLACKLEG DISCOVERIES

A highly potent blackleg serum can be produced from the horse.

This serum exerts a curvative action upon calves in the early stages of blackleg.

A fair degree of active immunity may be produced by administering virus to calves a few days after the serum has been administered.

Filtered edematous fluid possesses great immunizing properties.

In the field both serum and the filtered fluid—germ-free vaccine—have permanently protected calves upon premises where spore-containing vaccines have failed.

Attenuated spore vaccines commonly used do not insure permanent immunity.

It pays to insure calves by using germ-free fluid vaccine.

The department of veterinary medicine, Kansas State Agricultural college, has perfected a method of blackleg prevention which will not only check actual outbreaks of this disease among but will immunize animals against its attack. It is expected to revolutionize the cattle raising business in Kansas, putting it upon a thoroughly safe basis.

A serum has been produced from the horse which stops immediately losses in a herd where calves are dying from blackleg. A germ-free vaccine or aggrassin also has been produced from calves, which when used upon healthy calves will give permanent immunity from the disease.

SOME HAVE BEEN SKEPTICAL

Little publicity has been given to the experiments at the college, because of skepticism on the part of the United States department of agriculture and individuals interested. It was thought wise to wait until enough had been made to make the evidence conclusive. A bulletin giving the results of the laboratory tests of the vaccines and the results obtained from their use on more than 30,000 cattle under farm and range conditions is now in course of preparation and will be published for general distribution in the near future.

For many years attenuated spore vaccines have been used which have been put out by the United States department of agriculture, commercial concerns, and experiment stations. These do not insure permanent immunity. Blackleg organisms in the field in many localities are more virulent than formerly and consequently the vaccines are not so effective.

THERE'LL BE NO LOSSES

In herds where the disease is present it is necessary to make two applications of the attenuated spore vaccines, which means that the calves must be handled at two different times. This means, also, that before the owner knows his herd is infected, he has lost some calves. Put the value of these calves into the germ-free fluid vaccine, which requires but one handling of the animals, and give it to healthy animals, and there will be no losses.

This single vaccination with this germ fluid cannot transmit any disease to vaccinated calves or to those calves in a herd which have not been vaccinated. Another important consideration is the fact that the vaccine will not throw the calves off their feed.

HALF DOLLAR A CALF

It costs from 35 to 40 cents to vaccinate a 50-pound pig, valued at approximately \$5, against cholera, while it costs but 50 cents to immunize a \$40 calf against blackleg. The veterinary department is experimenting with other animals to see if a cheaper product

can be put out. The process of making the vaccine on a small scale is at present comparatively expensive. No commercial concern is now putting out this fluid, but applications have been made by firms in Muscatine, Iowa, and Wichita.

"In the spring of 1905, when I took charge of the veterinary department," said Dr. F. S. Schoenleber, head of the department, "I found that the department was sending to cattle raisers several hundred thousand of blackleg vaccine annually. At this time occasional reports would come to the office complaining of the inefficiency of the vaccine. Upon investigation it was found that at times the vaccine killed a certain percentage of the calves vaccinated while at others it did not protect them for any length of time. Further investigation showed that all the blackleg vaccine used, no matter from what source, acted in the same way.

DISEASE HAS GROWN VIRULENT

"From year to year these complaints increased in number, showing that the disease was becoming more and more virulent. Some cattle raisers complained that they vaccinated three, four, and even five times, and still lost calves, the losses running up in some cases to more than 10 per cent.

"These conditions prompted the department to look into the situation critically and see what could be done. In 1912 the work of analyzing and testing vaccine of the different makes was begun. It was shown that no vaccine was of a standard strength and that no two samples were exactly alike.

THEN INVESTIGATION STARTED

"Having proved all blackleg vaccines inefficient, we were then up against another problem: With all these losses from blackleg and with no reliable means to prevent it, could anything be done to relieve the situation? The question of some hyperimmune serum or serum and virus naturally presented itself and accordingly investigations were directed toward that end. Dr. T. P. Haslam and Dr. O. M. Franklin were detailed to prosecute the work and the latter has been kept at it exclusively for several years.

"After years of experimentation a serum was perfected which has never failed to prevent the spread of the disease, and in some instances has cured animals apparently beginning to show signs of the disease. A few well advanced cases have been cured with special treatment with large doses of the serum. This procedure, however, is only recommended in exceptional cases, as the expense is considerable and the chances of success are small even in the hands of an experienced person.

"In practically all cases, animals which are apparently well and show no symptoms of blackleg at the time of injection will remain well, and if symptoms develop shortly after the use of the serum another application undoubtedly will save the animal."

In June of last year, the method of producing and administering these vaccines had been sufficiently developed to warrant the agricultural experiment station in making a preliminary announcement concerning them to the agricultural colleges of the country, and to the cattlemen of Kansas and others who attended the feeders' convention at Manhattan.

MANY COLLEGES SEEK DATA

Later, representatives of the veterinary departments of the state colleges of Texas, Kentucky, Nebraska, and California visited the institution and received full information regarding the technique of this process. Since that time the college has furnished cultures of the blackleg organisms to the institutions of Kentucky and Texas, presumably for the production of these serums.

In the preparation of the anti-blackleg serum, explains Doctor Schoenleber, horses are injected with gradually increasing doses of blackleg culture. Usually about six doses at intervals of about ten days are necessary to produce a potent serum. The initial dose is 50 cubic centimeters and the maximum dose 700 cubic centimeters, when the point is reached in the administration of the culture at which it is assumed wise to test the serum for potency. Ten days after the last treatment, a sample of blood is drawn from the jugular vein and allowed to clot spontaneously. The clear serum is drawn off and three guinea pigs are inoculated subcutaneously with .55 cubic centimeters of the same. Twelve hours later these pigs receive one gram of a very virulent unattenuated blackleg virus. If the serum is fully potent the guinea pigs will not develop serious symptoms. The virulence of the virus used in serum testing should be determined before each test. Fully virulent virus should kill guinea pigs weighing from 12 to 14 ounces in doses of from two to two and a half milligrams.

HORSES VARY IN RESISTANCE

The resistance of different horses to the toxic effect of the injection and the depleting effect of bleeding varies greatly. Some horses will produce serum indefinitely, others rapidly lose flesh, become stiff, and die if the treatment is continued. In horses of average resistance it has always been possible to continue treatment long enough to get the horse to producing potent serum.

The protective action of the serum upon calves is tested by administering from 15 to 20 cubic centimeters of serum and three days later giving the calves an injection of fully virulent blackleg virus. These doses of serum were able to protect against large doses of virus. This virus had been previously tested for virulence on guinea pigs and calves and had been found to be fully virulent. These doses of virus, therefore, would have produced death in a large majority of these calves had they not been protected by this serum.

SOME ARE MORE SUSCEPTIBLE

Since the susceptibility of calves to blackleg varies so greatly, it is reasonable to suppose that the amount of serum necessary to protect against such large doses of virus likewise will vary. It is not anticipated that 15 cubic centimeters of serum would in every instance protect a very susceptible calf against a gram of very virulent virus.

The virus is usually made into small pellets and administered with the ordinary pellet injector.

Experience gained from the vaccination of more than 30,000 calves has demonstrated that 15 to 40 cubic centimeters of serum is sufficient to protect calves against one or two pellets made from slightly attenuated or pure virus.

NOT FOR ADVANCED STAGES

When serum is administered to calves showing the first symptoms of blackleg the symptoms, as a rule, improve or disappear and recovery takes place. Treatment of calves in the advanced stages of blackleg is unsatisfactory. For curative purposes doses of 300 to 500 cubic centimeters of serum are administered intramuscularly in the affected region. If the symptoms persist, a second dose is administered from 12 to 24 hours later. If the disease is only in the incubation period and the symptoms have not yet appeared, it seems probable that a dose of from 15 to 40 cubic centimeters of serum will prevent the further development of the disease.

It is generally recognized that the losses occurring from 12 to 48 hours after vaccination are limited to calves having the disease in the incubation stage when they were vaccinated. The absence of such losses in the serum treated herds is probably due to the curative action of the serum.

PROTECTS FROM NATURAL INFECTION

The passive immunity produced by the serum is of short duration. To produce active immunity of a certain

degree from one to two four-milligram virus pellets are administered three days after the injection of the serum. The degree of immunity produced by this pellet has in most instances been sufficient to protect calves from natural infection even on badly infected premises and where the ordinary spore containing vaccines had failed to produce protection. Of more than 30,000 head of cattle receiving this treatment, only five instances have been reported where a calf subsequently developed blackleg.

While the immunity produced by this method has been sufficient to protect the animals against natural infection, it has been found that this immunity is not sufficient to protect against the effect of the injection of a gram of virus.

RESULTS FROM GERM-FREE VACCINE

As shown by scientific investigation, the edematous fluid derived from blackleg lesions when freed from living organisms possesses marked immunizing properties.

The edematous fluid was collected from the tissues of calves artificially infected with blackleg. This fluid was sterilized by filtration. The immunizing properties of this germ-free fluid or aggrassin are shown by the fact that doses of from eight to fifteen cubic centimeters were sufficient to protect calves against doses of virus which promptly killed the non-vaccinated animal used as a check.

In the field this germ-free vaccine has given excellent results. Doses of five cubic centimeters have produced in calves six months of age or older sufficient immunity to protect them for the remainder of their susceptible period. No losses have occurred in vaccinated herds except that occasionally a calf succumbed within 12 to 24 hours after the treatment. These calves were doubtless affected with blackleg in the incubation period when vaccinated, it is stated, and such losses are to be expected after vaccination with any agent not producing a passive immunity.

MOSES HAD BEST PLAN

(Concluded from Page One)

their own problems and duties. Under our system of leasing the tenants who received such careful and valuable instruction from the older farmer have long since moved away and a new man, who is wholly unacquainted with the land and perhaps of limited farm and business experience, is on the land directed by these inexperienced and otherwise busy landowners. The result is bound to be a relatively low income.

BUT TENANCY IS INEVITABLE

"Tenancy is in many respects an evil, but if evil, it is not all evil, for there are good tenants as well as poor ones. Then, under our present system of land tenure, tenancy is necessary and inevitable.

"Live stock farming does not favor the development of the tenant system and where live stock is generally grown in this country few tenants are found. Where the tenant comes into live stock regions, the herds are soon dispersed, the pastures are plowed and planted to grain, and the barns and fences fall into decay.

"In England under a system of tenancy, live stock farming has reached a higher degree of development than in any other country. But the system of leasing in England is very different from that prevailing in this country.

AMERICAN SOIL WASTED

"In every country of Europe land has been improved in fertility within the last half century. In this period we have wasted the American soil at a rate far beyond that of any other people or any people in any other age.

"This has been due partly to the fact that we have had labor-saving, efficient machinery with which to till our soil and in part to the fact that the American farm had to be cleared, paid for, and improved out of the soil and for the most part within this period. The quickest and surest way to raise money with which to meet the interest and principal of a mortgage or with which to build a home, barn, fences, silos, and windmills is to plow the life out of the land."

STARTS FIGHT ON WORM

GEORGE A. DEAN URGES EARLY BEGINNING FOR ANNUAL BATTLE

Both Shade and Fruit Trees Are Destroyed by Pest—Banding Keeps Female Moths Away from Leaves—Spraying Also Useful

While apples are selling at from \$2.25 to \$2.50 a bushel is a good time to start the annual fight against the cankerworm moth, according to George A. Dean, professor entomology in the Kansas State Agricultural college. Many Kansas shade trees as well as fruit trees are destroyed annually by the cankerworm.

"Begin early," advises Professor Dean. "Sometimes many moths will emerge in February or even earlier, but it is usually in March that the moths ascend the trees in the greatest numbers. Banding the trees is a simple and effective method of preventing the ascent of the wingless females.

PUT BANDS ON EARLY

"A sticky substance is smeared along the middle of a six-inch band. The bands should be put on in the first warm days of early spring or late winter, and the sticky material renewed when it hardens.

"Either cotton should be stuffed behind the band to close all the crevices between the tree and the band, or a strip of the cheapest grade of cotton batting, about two inches wide, first should be placed around the tree and then covered with the band of tarred paper.

VARIOUS SUBSTANCES IN USE

"The paper should be drawn snugly enough to press the cotton into the crevices. If the paper band is much wider than the narrow cotton one, the latter will be completely covered and the unsightly appearance of cotton, either above or below the edges of the paper, will be avoided.

"A number of substances of sticky nature may be used, such as pine tar, coal tar, printers' ink, and dendrolene. Effective commercial preparations may be purchased.

LEAD ARSENATE FOR SPRAY

"A wooden paddle should be used in spreading the substance upon the band. A smooth coating one-eighth of an inch thick should be the result. Sometimes it is necessary to renew the sticky substance, as many of the females may be able to cross the band over the dead bodies and wings of males, which may completely cover the sticky portion of the band."

Banding is especially recommended by Professor Dean for large trees that would be difficult to spray. For smaller trees and fruit trees spraying with arsenate of lead, using two or three pounds to 50 gallons of water, is advisable. The first spraying should be done as soon as the foliage has partly expanded and before the trees bloom, and the second spraying as soon as the blossoms fall.

HOLTON TO MAKE SURVEY OF COUNTY IN NEW YORK

Professor of Education Is on Leave at Columbia University

Edwin L. Holton, professor of education in the Kansas State Agricultural college, who is studying in Columbia university on leave of absence from the college, has been selected to make a rural survey of Orange county, New York. He expects to do the field work in March.

Professor Holton has done much successful survey work and is in great demand for this type of service.

FRANK TOMSON WILL SPEAK TO JOURNALISM STUDENTS

Editor of Well Known Breed Paper to Make Address Friday

Frank D. Tomson of Chicago, editor of the Shorthorn in America, will speak to students in industrial journalism and others interested at 11:30 o'clock Friday morning in room 55, Kedzie hall. He will discuss the editing of a breed paper, a subject never before treated by a speaker here.

Mr. Tomson is an authority on shorthorn cattle, as well as editor of one of the leading breed papers of America. His address should be of marked interest.

Farm and Home Week Number

THE KANSAS INDUSTRIALIST

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Number 18

HEADS ALL KANSAS COWS

CANARY BELL, AYRSHIRE, NOW HOLDS RECORD FOR STATE

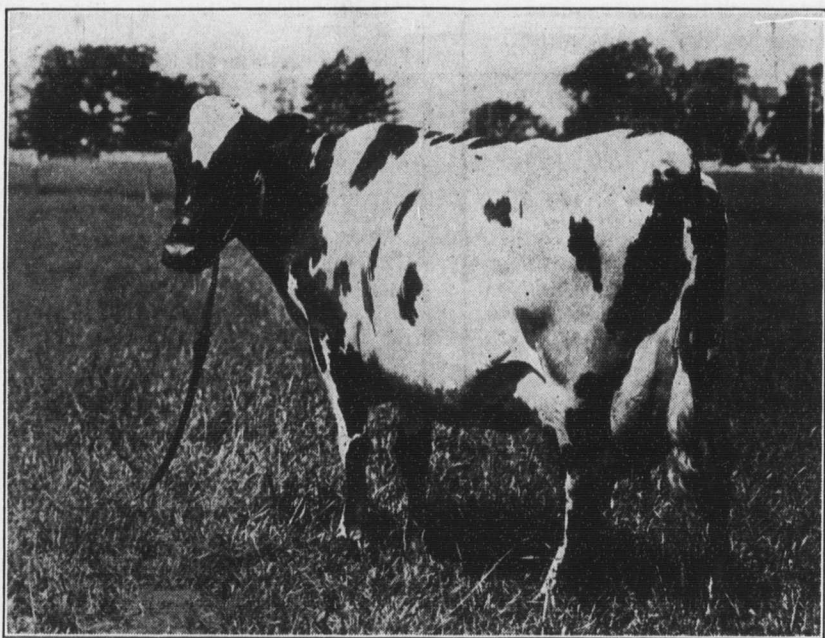
Produces Six Times Average Amount of Butter—Two Year Old Daughter of Same Animal Takes Third Place in World Grouping

A new dairy cow record for Kansas has just been completed. This time it is an Ayrshire cow, Canary Bell, owned by the Kansas State Agricultural college. Canary Bell completed her year's work January 17, 1917, and produced during the year 17,406.4 pounds of milk containing 668.16 pounds of butter fat, which is equivalent to 786

milk and butter Canary Bell has produced three bull calves and two heifers.

ON WAY TO GREAT RECORD

Melrose Canary, a two year old daughter of Canary Bell, also finished a splendid record last month. She produced 13,891.1 pounds of milk and 505.5 pounds of butter fat, equivalent to 589 pounds of butter. Melrose Canary Bell now holds third place in production among two year old Ayrshire heifers of the world. She was born and raised on the college farm and is sired by the senior Ayrshire herd bull, Melrose Good Gift. Melrose Canary Bell produced 131 pounds more butter fat than her mother did at the same age.



CANARY BELL PRODUCED SIX TIMES AS MUCH BUTTER AS THE AVERAGE KANSAS COW

pounds of average butter. This is the second highest record ever made in Kansas.

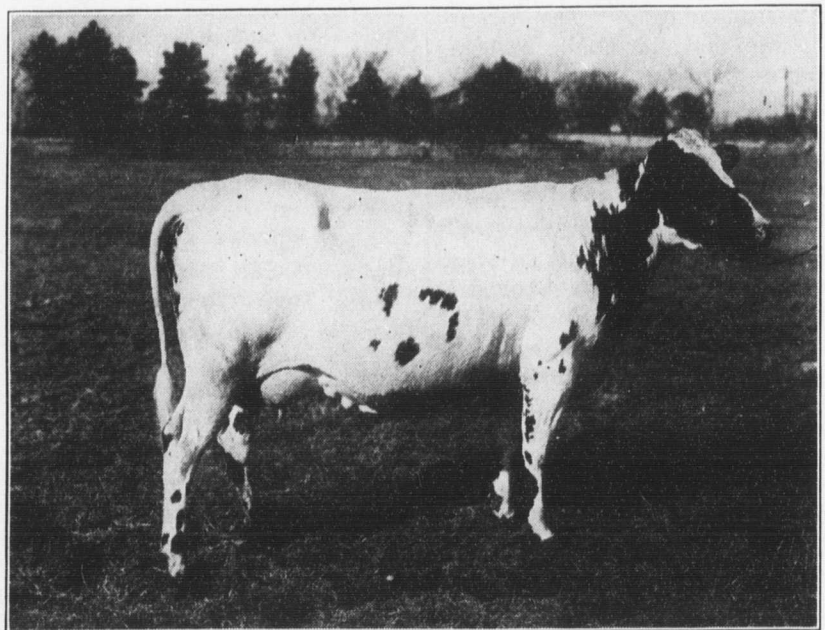
Maid Henry, a Holstein cow, made the highest record when she produced 19,600 pounds of milk and 837 pounds of butter as a 13 year old. Maid Henry is dead and therefore Canary Bell holds the highest record in the state for a living cow.

DEVELOPED BY COLLEGE

Last year Canary Bell produced six times as much butter as is produced by the average Kansas cow. Canary Bell was purchased by the college from Sam Jones of Wisconsin when she was

Another two year old Ayrshire heifer sired by Melrose Good Gift has just finished a record of 12,588.8 pounds of milk and 484 pounds of butter fat, equivalent to 566 pounds of butter. This heifer ranks seventh among the two year old Ayrshire heifers of the world.

The Ayrshire herd of the agricultural college has gained quite a reputation outside the state of Kansas. The state universities of Missouri and Minnesota and Purdue university, Indiana, have purchased Ayrshire bulls here to place at the head of their Ayrshire herds.



MELROSE CANARY RANKS THIRD AMONG TWO-YEAR-OLD AYRSHIRE HEIFERS OF THE WORLD

six months old. She is now eight years old and consequently has been raised and developed by the agricultural college.

This record does not come as a surprise, because Canary Bell has always been a good producer. Last year she produced 651 pounds of butter and with her first calf she produced 436 pounds. Her total production for life to date amounts to 63,903.6 pounds of milk and 2,801 pounds of butter. In addition to

BUFF COCHIN BANTAM HENS ARE IDEAL FOR BROODING

Disposition and Weight Make Them Suitable for Purpose, Says Specialist

Buff cochin bantam hens are ideal for brooding, asserts N. L. Harris, superintendent of the poultry plant at the Kansas State Agricultural college. Their tendency toward setting, their quiet disposition, and their light weight make them desirable.

BOOST FOR GOOD ROADS

SECOND ANNUAL SCHOOL AT AGRICULTURAL COLLEGE IS SUCCESS

Highway Authorities of Kansas and Other States on Program—County Engineers Take Active Part in General Discussions

The second annual road school of the Kansas State Agricultural college, February 5 to 9, was attended by more than half of the county engineers of the state and many good roads enthusiasts. Papers were read by highway authorities of this and other states.

"The daily use of public highways in Kansas has increased with more rapidity than any other single activity within the state," asserted W. S. Gearhart, state highway engineer, in speaking at the meeting.

"Ten years ago there were practically no automobiles in Kansas while today there are more than 114,000, or one for each three families, and more than one car for each mile of road. The auto truck and tractor business has scarcely been touched, but it is now generally recognized that this new form of traffic is destined to replace old Dobbin on the highway in the very near future.

CONDITION OF BRIDGES IS POOR

"These new methods of transportation require new and adequate systems of road and bridge construction and maintenance. The condition of the roads and bridges is many years behind the traffic.

"Kansas roads were planned for horse drawn vehicles, moving at a maximum speed of approximately 10 miles an hour, and we have not even rounded off the right-angle corners in most cases. Even the weeds and hedges are not cut at these corners and we are just beginning to talk about the elimination of the railroad grade crossings.

"The old drainage structures we call bridges and culverts, were not designed in most cases to carry any given load. They were just built.

"It is more important that all of the bridges and culverts be in good condition than that all the roads be kept in first class repair, for if the road is to be used at all, the drainage structures must be kept up.

JUNK PILES NOT SATISFACTORY

"It is not practical and not necessary at the present time to surface all of the roads, but a junk pile of wood or tin for a culvert, or a scrap heap of wood or steel for a bridge, is just as much out of place, and as expensive to maintain on an earth road as on a highly improved boulevard, for the bridges and culverts in the lane rot out and rust out and wash out as on the most important state roads. It is not the traffic in most instances that destroys these structures but the elements."

The economy of any type of road depends almost entirely upon its proper maintenance, in the opinion of B. H. Piepmeier of Springfield, Ill., maintenance engineer, Illinois highway department.

ROADS NOT KEPT UP

"A great many types of roads have been condemned in the eyes of the public chiefly on account of the lack of proper maintenance," said Mr. Piepmeier. "It is not uncommon to hear the laymen say that certain types of roads are unsatisfactory as they go to pieces rapidly under ordinary traffic. It is evident that if proper maintenance had been given such roads, they would now be recommended for use in many places rather than condemned."

Among the speakers were Dr. Henry J. Waters, president of the college;

E. C. Johnson, dean of the division of extension; A. A. Potter, dean of the division of engineering; J. C. Wonders, division engineer, United States office of public roads; T. R. Agg, professor of highway engineering, Iowa State Agricultural college; Robert C. Terrell, professor of highway engineering, Iowa State Agricultural college.

WORLD IS BEING REBORN, BELIEVES KANSAS EDITOR

R. P. McColloch Commends Vocational Training in College as Preparation for New Conditions

That the world is being born again through the present war, is the belief of R. P. McColloch of Anthony, editor and lawyer, expressed in an address before the students of the Kansas State Agricultural college. He urged upon the young men and women to fit themselves for this new world.

Expressing his interest in the college and declaring it to be one of the most valuable of the assets of Kansas, Mr. McColloch urged that parents having sons and daughters attending get into closer touch with the college and its activities that they might more fully realize its importance and the scope of its work.

The speaker contrasted the opportunities for education at this institution with those of the schools and colleges of his day. He commended vocational education as distinguished from education for purely professional life and spoke of the doors opening for young people and leading into the fields of science. He said it was far better to be a unit, a serving and serviceable unit, in a community, large or small, than to be an indifferent public servant, or a mere seeker after place, honor, money, for personal ends.

Mr. McColloch pictured conditions in Europe, drawing the conclusion that the world was either in the throes of dissolution or in the agonies of a new birth. Holding to the latter idea, he advised the students to prepare themselves in college to solve the new problems that would arise.

ONE KANSAS ACRE COULD MAKE PROFIT OF \$3,256

Girl's Work in Garden Contest Shows Possibilities of Soil

That one acre of Kansas land is capable of producing a profit of \$3,256 when carefully cultivated was shown by Elsie Gordanier of Otego, Jewell county, who won the first prize in the annual square rod garden contest. Her lead over her competitors was due to the high value of products grown on her plot and to the net profit of \$20.35.

The second prize was won by Ruth Bray of Manhattan, who ranked first in every item considered by the judges, save value of products.

The garden club contest is under the direction of Otis E. Hall, state club leader, division of extension, Kansas State Agricultural college. In the 1916 contest, 566 boys and girls took part and 30 of these were candidates for state honors.

With a profit equal to \$1,402.40 an acre, Hattie McKinley of Admire, Lyon county, won the annual Kansas tomato contest for 1916. This contest also is in charge of Mr. Hall. Second place was won by Lottie Fitch of Lowmont, Leavenworth county.

Hattie McKinley raised 3,080 pounds of tomatoes on 10 square rods of ground, selling 26 bushels of ripe fruit at \$3 a bushel and 14 bushels of green tomatoes at \$1 a bushel, and canning 200 quarts for home use. The expenses for seed, fertilizer, labor, marketing, and canning were \$4.35. The amount of money received, \$92, less the expenses, leaves \$87.65 profit besides the canned fruit on hand.

CROWD BREAKS RECORD

ATTENDANCE LARGEST IN HISTORY OF FARM AND HOME WEEK

Program Interests All Classes of Persons—Specialists of College and Other Institutions Give Much Practical Advice

Farm and Home week attendance at the agricultural college was 1,800, according to an estimate by E. C. Johnson, dean of the division of extension.

The actual registration was 1,307, 86 counties being represented. Registration was not compulsory and several hundred persons did not take the trouble to turn in their names. The increase in attendance over that of the meeting held in December, 1915, was 500.

The heaviest enrolment was from Riley county—220. Dickinson county



DEAN E. C. JOHNSON

came second with 50. Marshall county sent a delegation of 38, Jewell and Pottawatomie each 35, and McPherson, 33. Manhattan demonstrated that accommodations could be provided for a much larger crowd.

PUT SUGGESTIONS INTO PRACTICE
The program was adjudged the strongest in the history of this annual event which previously has been held in the Christmas holidays. Practical talks were given not only by the college specialists, but by well-known authorities from other institutions. It is expected that the visitors will go back to their respective farms and put many of the suggestions offered into actual practice. Men, women, boys, and girls in attendance were strong in their praise of the meeting.

FEATURES INTEREST VISITORS
No dull moments were experienced. Something was going on all the time, something to interest every one of the visitors. There were lectures, demonstrations, and entertainment features. Aside from the general sessions, special programs were provided for the women, boys and girls, those interested in problems in mechanics, butter making, and in good roads. Special meetings of Kansas agricultural and stock breeders' associations were well attended. Dairy and horticultural displays attracted attention, while the special exhibit in the auditorium by the Glenwood Mother-daughter club received much favorable comment.

ENGINEERING SECTION POPULAR
Sessions in the engineering section proved popular. A demonstration in molding and casting of iron served as an eye opener.

Mrs. Louise Campbell of the Iowa State college was a well-known speaker in the home economics section. Valuable talks of interest to women were given by members of the faculty and others.

The boys and girls were by no means neglected. They listened to papers and discussions covering a wide range of subjects.

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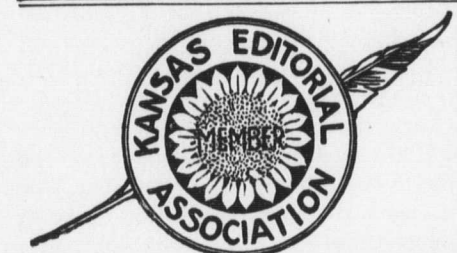
H. J. WATERS, PRESIDENT Editor-in-Chief
N. A. CRAWFORD Managing Editor
J. D. WALTERS Local Editor
ADA RICE, '95, M. S. '12 Alumni Editor

Except for contributions from officers of the college and members of the faculty, the articles in THE KANSAS INDUSTRIALIST are written by students in the department of industrial journalism. The mechanical work is done by the department of printing. Of these departments Prof. N. A. Crawford is head.

Newspapers and other publications are invited to use the contents of the paper freely without credit.

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WEDNESDAY, FEBRUARY 14, 1917

IT TOUCHES ALL KANSAS

There is no citizen of Kansas who will not be touched, directly or indirectly, by the Farm and Home week which was featured by the agricultural college.

Attending the sessions were farmers, wives of farmers, agricultural specialist, teachers, boys and girls, editors of farm journals and newspapers, and even men from occupations far remote from agriculture.

These have returned to their homes, imbued not primarily, the college hopes, with interest in the college, but rather with interest in the better agriculture, the better home economics, the better rural life for which the college endeavors to stand and which it is trying to present effectively to the people of Kansas. It was these things which were emphasized in the program of every meeting. Not only the programs, but the exhibits and the demonstrations, taught in a practical, easily understood way the principles of better farming and better home making. And everybody was stimulated and inspired by the presence of hundreds of others engaged in work similar to his own.

The men and women and the boys and girls—the farmers and the future farmers, the housewives and the future housewives, the teachers and the future teachers of Kansas—not only will practice the suggestions given in Farm and Home week, but will hand them on to others. And there are no groups in the state that touch more closely the people of the state as a whole than the farmers, the housewives, and the teachers. Their interest in the best in farm and home life is a guaranty of the interest of Kansas as a whole in these things.

When the record is written of the influence of this event on agricultural and home progress in the state, the name of Dean Edward C. Johnson will be given a high place. It was largely through his efficient, well laid plans, through his ability to cooperate with men and women within and outside the state, through his arrangement of a program emphasizing things of real interest and real value to the people of Kansas, that the week will make a genuine impress on the life and work of the state.

SOY BEANS IN JAPAN

The soy bean is cultivated quite extensively throughout the empire of Japan and occupies about 3.8 per cent of the total area devoted to the cultivation of rice and other cereals. In many districts it is cultivated not in fields by itself, but in rows along the edges of rice and wheat fields. Although not grown to any considerable extent as a main crop by the Japanese farmer, the average annual production is about 18,000,000 bushels. In quality

the beans raised in Japan are said to be superior to those of Manchuria and Chosen and are used exclusively in the manufacture of food products. The imported beans, of which very large quantities are obtained from Manchuria and other Asiatic countries, are used principally in the manufacture of bean cake and oil.

The methods of culture of this crop, though varying slightly in different provinces, are quite similar to those employed in Manchuria. The average yield of soy beans to the acre for the last 10 years is 15.3 bushels. The highest average yield recorded is 21.6 bushels to the acre, while the lowest average yield is 8.48 bushels. Accurate data as to the cost of production are not available, but estimates made by Japanese agricultural experts place it at about \$10 per acre exclusive of taxes. The average market price in Japan for home-grown beans is about \$1 a bushel, while for imported beans it is about 70 cents a bushel.—United States Department of Agriculture.

THOSE IDLE HOURS

We have never had very much faith in the idea that winter is a time when the average farm family hibernates around the kitchen stove. Considering the shortness of the daylight, not much time remains for leisure when the day's simplest duties are performed. There is the pump to thaw out, stock to feed, wood to carry, colts to break, children to take to and from school, supplies to get in town, snow to shovel, meals to eat, and chores again.

For those who find that time still hangs heavy on their hands, here are a few of the more standard winter time killers modern civilization has added; overhauling the automobile, concreting the cellar floor, making concrete fence posts indoors, sharpening all the farm and household tools, putting in modern improvements, filling the ice house, reading incubator and seed catalogues, attending farmers' week at the agricultural college, addressing the local farmers' institute, pruning the orchard, testing seed corn, hauling out the manure, starting an account system, balancing the dairy rations, laying out a system of tile drains, selecting the tractor, and writing for your farm paper. The old-fashioned man who used to spend the winter playing checkers has a son who takes that time to send checks to his sons and daughters at college.—Farm and Fireside.

THE PRICE OF FARM PROGRESS

Before oats or wheat was extensively grown in this country there were no oat and wheat smuts; or, if there were plant diseases in some localities, they did not spread very fast because fields were small and far between. New sections of country were opened up and it took many years before the common diseases of our ordinary farm crops secured a strong foothold. Then, too, land was cheap, and if crops did not yield up their expected limit, it didn't matter so much because the investment was small and operating expenses low. No one paid much attention to the causes of poor yields—a good many considered them providential.

The codling moth that destroys our unsprayed apples today had not reached the newer sections of country and so it was with many other insect pests. In those early days men didn't raise 300 or 400 hogs on a quarter section of land, or a thousand to a section, as is common today in many localities. Two or three sows were about as many as a man on a quarter section kept and from those he raised fifteen or twenty pigs. Perhaps half a mile away there was another small herd; perhaps it was still smaller. The chances for the spread of cholera, if it did break out in a herd or two, were small as compared with the present when there is a hundred times more traffic on the roads and ten times more hogs.

In early days flax was raised in the eastern states, but it soon became unprofitable in those sections and gradually moved westward to the new land

where it did well only to give out and have to find a home farther west. When it finally reached North Dakota a scientist in that state discovered the reason why flax could not be grown on the same soil, year after year, as can wheat and other grains. He found that a fungous disease was carried with the seed from one farm to another and from one section of country to another and that this same fungus was able to live in the soil for six or seven years, ready to infect the next flax crop that might be seeded on that land and destroy the plants as soon as they put their heads above ground. In this case the disease had always been present and farmers understood that flax soon became an un-

day, Superintendent Thompson being confined to his room with the grip.

E. J. Abell, third-year, is offered a position as foreman of the state industrial school farm at Beloit, but declines it that he may complete his course here.

Miss Florence Belgarnie, the English lecturer, visited college Tuesday morning in company with Mr. Hogg of Manhattan and found much interest in buildings, grounds, equipment, and methods.

Assistant Marlatt has just finished a dozen large bromide prints of college views, which are the admiration of all who see them. A view of the main building from the main entrance is pronounced the best yet produced.

The Farmer's Home

F. B. Caldwell before the Kansas Swine Breeders' Association

The country home approaches the closest to the ideal of God, and is the cornerstone of our nation. The ideal country home I shall picture is a breeder's home. It must be well located in respect to shipping facilities, the soil must be deep and productive, it must have running water, it ought to possess a slightly building place, and if it is in Kansas it will be on a good road.

While it is not necessary to be a landscape gardener to equip a farm with buildings, yet we ought to mix in our artistic taste in equal proportions with our ideas of usefulness, permanence, and cost.

While it seems easy for some to overbuild, it seems to be a common failure to underbuild. Overbuilding increases upkeep and decreases net earnings while underbuilding permits losses that can never return. Good buildings on even a poor farm are a great asset when used in the breeding and selling of purebred live stock, but from a farmer's standpoint the better the farm the better buildings it will support.

profitable crop, but this was explained by saying that it was "a hard crop on the soil." Had they known that the disease could have been held in check by treating the seed with formalin, they could have used that treatment to as good advantage in those days as at present.

The point that we wish to bring out is that, with all due respect for the man who has farmed for forty or fifty years, if he has not kept abreast of the scientific discoveries that have been made in agriculture in that time, his advice with reference to modern methods of farming is not safe to follow. We are no longer living in the nineteenth century. Agriculture, like all other pursuits, is making progress. A more intensified agriculture has brought with it new problems—more insect pests and more plant and animal diseases—to be solved.

That, in a way, is the price of intensified agriculture. But as necessity is the mother of invention, so science has come to our aid and shown us how to combat our new and more numerous enemies. Agriculture, thanks to a wise government, has advanced in scientific knowledge like all other pursuits, and it is up to us to make use of that knowledge and not harp about how things were done a half century ago.—Farmer and Stockman.

A QUARTER CENTURY AGO

Items from The Industrialist of February 13, 1892

W. W. Hutto, '91, visited the college last Saturday.

The Kansas Weekly Capital now boasts a college correspondent.

The fourth years are furnished a lunch by the cooking class on Wednesday.

The museum has received a pair of ruffed grouse skins from Michigan, the gift of M. J. Bryant.

Professors Walters, Graham, and Georgeson attend a farmers' institute at Bluff City, Harper county, this week.

W. P. Tucker, fourth-year, had charge of the printing classes Mon-

A list of Pottawatomie county teachers kindly furnished by Superintendent Wallace contains the names of graduates J. W. Bayles, '89, and W. W. Hutto, '91, and former students, Miss Mary Galloway, E. F. Beal, Miss Clara Grossnickle, Miss Amy Grossnickle, and S. I. Thackrey.

President Fairchild attended a successful farmers' institute in Mission township, Shawnee county, on Wednesday. Oak Grange hall was filled with earnest men and women who showed in every way the thrift and enterprise of that community. The program was a full one, and well handled, a basket dinner being one of the most important items.

Funds for the Kansas educational exhibit at the Columbian exhibition are already accumulating. The state reform school has the honor of being the first contributor, its donation of \$7.50 having been made in January, 1891. President Fairchild having filed a bond of \$20,000, is duly installed treasurer of the board of directors for the Kansas educational exhibit at the Columbian exposition.

At the meeting of the state board of education on January 29, institute instructor's certificates were issued to the following persons: W. J. McLaughlin, '84, Bern; M. A. Carleton, '87; Miss Bertha Bacheller, '88, Lyons; John Davis, '90, Emporia; Ben Skinner, '91, Fairview; E. B. Bacheller, third-year in 1884-'85, Emporia; Lyman Harford, third-year in 1885-'86, Manhattan; W. H. Phipps, student in 1890-'91, Chapman.

The first division of the third-year class entertained the chapel audience yesterday afternoon with the following program: M. O. Bacheller, "Persecution in Russia;" J. W. Brooks, "The Encouragement of Crime;" Miss Martha Cottrell, "The Cook;" E. M. S. Curtis, "Wealth: Its Centralization and Power;" D. T. Davies, "The British Nobility;" Miss Laura G. Day, "The Women and the World's Fair;" Albert Dickens, "Influence of Environment."

THE PROUD FARMER

Vachel Lindsay

Into the acres of the newborn state
He poured his strength, and plowed
his ancient name,
And, when the traders followed him, he
stood
Towering above their furtive souls and
tame.

That brow without a stain, that fearless
eye
Oft left the passing stranger wondering
To find such knighthood in the sprawling
land,
To see a democrat well-nigh a king.

He lived with liberal hand, with guests
from far,
With talk and joke and fellowship to
spare,—
Watching the wide world's life from
sun to sun,
Lining his walls with books from every-
where.

He read by night, he built his world
by day.
The farm and house of God to him
were one.
For forty years he preached and
plowed and wrought—
A statesman in the fields, who bent to
none.

His plowman-neighbors were as lords
to him.
His was an ironside, democratic pride.
He served a rigid Christ, but served
him well—
And, for a lifetime, saved the country-
side.

Here lie the dead, who gave the church
their best
Under his fiery preaching of the word.
They sleep with him beneath the rag-
ged grass. . . .
The village withers, by his voice un-
stirred.

And though his tribe be scattered to
the wind
From the Atlantic to the China sea,
Yet do they think of that bright lamp
he burned
Of family worth and proud integrity.
And many a sturdy grandchild hears
his name

In reverence spoken, till he feels akin
To all the lion-eyed who built the
world—
And lion-dreams begin to burn within.

SUNFLOWERS

It also pays to scrutinize.

Man wants but little down below.

It's a poor opinion that won't work
both ways.

Still, we don't understand why
George Washington never told a lie.

A little alimony will bring instant
relief to the man who is suffering from
a torpid wife.

People who persist in being the
whole show should serve sleeping po-
tions between acts.

We have a great deal of respect for
a man who can read a life insurance
policy and not go crazy.

This is the time of year when coal
piles assume all the respectability of
a highly treasured heirloom.

Why is it that no one has thought
of having the Kaiser put out of the
game by a big league umpire?

We still contend that a ukelele is
just as far from being a musical in-
strument as a belligerent tomcat is.

How would you like to meet your
best girl coming out of a Beauty
Shop? And how would she like it?

Just to show folks that she is a real
sport, one of New York's prominent
society women treated her dance
guests to a real meal the other day.

Mathematicians claim that there is
no known method of computing the
number of business letter experts in
the country. And there are two gas
engine experts for every microbe.

AMONG THE ALUMNI

Miss Alberta Wenkheimer, '09, is teaching in Minnesota.

Fred M. Bealey, '15, is an interested college visitor from his home at Morrill.

Albert D. Wise, '13, is principal of the farm school at San Carlos, Panguasin, P. I.

Miss Kathrina Munger, '15, is teaching in the Russell Springs high school in Logan county.

A. J. Herold, '16, is employed by the General Electric company at Schenectady, N. Y.

Miss Esther Nelson, '14, is now head dietitian of the West Suburban hospital, Oak Park, Ill.

A. H. Baird, '07, who is farming near Minneapolis, Kan., was here for Farm and Home week.

Miss Nelle Beaubien, '16, is taking graduate work in home economics in the University of Wisconsin.

F. H. Dillenbach, '16, is teaching in the rural high school at Roxbury. He is well pleased with his work.

P. B. Potter, '11, is instructor in agricultural engineering in the Ohio State university at Columbus.

Martin Binney, '16, is working toward his master's degree in plant pathology in the University of Wisconsin.

H. H. Haymaker, '15, is in the University of Wisconsin taking graduate work toward the degree of doctor of philosophy.

U. A. Domsch, '11, of Copper Creek, Ariz., visited college Thursday and Friday of last week. He was called to Kansas on account of the death of his mother.

Miss Emma Irving, '10, who has taken a nurses' course at Christ's hospital, Topeka, is engaged in missionary work at a hospital at Capiz in the Philippine islands.

Mrs. Wilma (Cross) Rhodes, '04, is in Sapulpa, Okla., teaching domestic science and art in the Euche School for Indian Girls. Her two children are with her. She is well pleased with her work.

A. Segel, '12, is beginning his second year as city engineer of Audubon, Ia. By the end of the year the town will have spent more than \$250,000 for sewers, pavement, and other improvements.

Reynold Shuyler, '10, and Mrs. Clara (Woestemeyer) Shuyler, '10, came in from Bethel, near Kansas City, to attend some of the sessions of Farm and Home week and to visit friends.

Carl C. Long, '08, is located at Grace, Idaho. He is manager of the biggest hydraulic electric plant in the west. One of its offices is to assist the Northern Pacific trains in crossing the divide.

Ernest Stewart, who was graduated from the school of agriculture in 1915, is farming with his father near Morganville. He is active in the community Sunday school and plays in the Morganville orchestra.

Roy E. Long, student in 1901 and 1902, was in attendance during Farm and Home week. He is owner and manager of the Salt Creek ranch near Neodesha. His specialties are Hereford cattle and Duroc Jersey hogs.

Walter Harder, who was graduated from the school of agriculture in 1916, spent Farm and Home week here. He is farming in Ottawa county and uses his knowledge of blacksmithing, carpentry, and concrete construction on the farm.

Mr. Gallup and Mrs. Stella (Hawkins) Gallup, '09, and two children of Marysville, visited Mr. and Mrs. Joy Hammett, east of Manhattan, this week. Mrs. Hammett was formerly Miss Alice Hawkins, a freshman in general science last year.

D. H. Otis, '92, assistant dean of the college of agriculture and head of the farm management department in

the University of Wisconsin, has just completed a most successful year in farm management contests. More farmers of the state were enrolled than ever before.

Three graduates of the Kansas State Agricultural college are in the home economics department of the University of Wisconsin. Miss Abby Marlatt, '88, is director of the course; Miss Helen Parsons, '12, is an instructor; and Miss May Cowles, '12, is assistant.

BIRTHS

Born, to Mr. T. P. Haslam, '08, and Mrs. Edith (Justin) Haslam, '08, Manhattan, on February 8, a daughter, Phyllis.

AT TEACHERS' MEETING

A number of college people will appear on the program of the Central Kansas Teachers' association at Hutchinson February 22 and 23. Dr. E. H. Reisner, professor of education, will address the rural school round table; Dr. J. R. Macarthur, professor of English, the English round table; and W. T. Stratton, assistant professor of mathematics, the round table in mathematics. P. C. Vilander, '11, superintendent of schools at Peabody, is chairman of the mathematics round table. Miss Mary Dunlap, '16, instructor of home economics in the Peabody schools, will discuss, "Our Approved Textbooks" before the home economics round table.

HARD ROADS ARE NECESSARY FOR EFFICIENT USE OF TRUCK

How Time May Be Saved and Labor Reduced on Farm

The farm truck is destined to play an important part in the marketing of farm produce, but in the meantime much attention must be paid to the roadways over which they are to be operated, in the opinion of W. H. Sanders, instructor in farm motors in the Kansas State Agricultural college.

"To use a truck to advantage hard roads are necessary," said Mr. Sanders. "Trucks have been used with marked success for a number of years on paved streets. Although they were used to transport food and water to the United States troops during the recent occupation of Mexico, the war department soon decided that hard roads were a requirement in operating trucks to the best advantage.

"Use of a truck on the farm saves time and reduces the number of men required to do the farm hauling. When a truck is operated on the farm greater care will be used in laying out the fields so as to give a more efficient use of power expended. Time will be saved, because less time will be spent on the road between town and the farm. The number of farm hands will also be reduced."

TILE DRAINAGE TURNS WASTE LAND TO FERTILE FARM SOIL

Increased Crop Returns Pay for Improvement in One to Three Years

The importance and economy of reclaiming wet and unproductive land, is emphasized by H. B. Walker, associate professor of irrigation and drainage engineer in the Kansas State Agricultural college.

"Through tile drainage, land which on account of its wet condition is unprofitable for cultivation, may be made useful and productive," said Professor Walker. "Wet land which is susceptible to underdrainage, always has a soil rich in fertility, and to leave it in such a condition means that the productivity of the farm is decreased.

"Usually the crop returns from land which has been tile drained will pay for the improvement in from one to three years. The profits from increased production, however, represent but one of the many advantages to be gained by tile drainage. The value of the farm is increased as the number of tillable acres is reduced. Farm values are regulated by the acreage which may be cultivated. Thus by reducing the number of wasted acres the entire farm unit is given an increased value. Wasted area is the direct basis for discounting farm value."

WILL GAIN BIG PLACE

SUDAN GRASS TO PLAY IMPORTANT PART IN KANSAS AGRICULTURE

Is Not Now Money Crop, Nor Is It Soil Improver, but Is Worth Growing for Hay—H. N. Vinall Gives Suggestions

That Sudan grass will have an important place in Kansas agriculture in the future, is the opinion of H. N. Vinall, of the United States department of agriculture, who spoke before the Kansas Crop Improvement association at the agricultural college Farm and Home week. Texas now ranks first in the production of this crop and Oklahoma and Kansas are close seconds.

"Sudan grass is not a money crop in the ordinary meaning of that term," said Mr. Vinall. "It is not a soil improver, but must be used to supply roughage or hay for farm stock. There may be a time when a large acreage of it will be grown for the Kansas City and Fort Worth markets, but there seems to be no immediate prospect of this.

SALABLE ON WESTERN MARKET
"If a man's corn crop has been ruined by continued wet weather in the planting season or his wheat crop has been destroyed by the army worm or the green bug, there would yet remain time to plant and grow a crop of Sudan grass hay.

"No market has been established for Sudan grass hay, but there is little doubt that it could be sold at a fair price on any of the western hay markets if it were properly cured and baled.

USEFUL AS CATCH CROP

"The farmers in eastern Kansas will use it most often as a catch crop, seeding it in preference to millet when they feel the need of an emergency hay crop. In the western part of the state, Sudan grass should be grown quite generally. Properly handled it is quite as dependable a crop as sorghum or millet, and the quality of hay is better than that of either of these crops. These statements are based upon actual experiments at the Hays and Tribune experiment stations.

"In the western third of Kansas it has been found profitable to plant Sudan grass in rows 36 to 44 inches apart and to cultivate as one would corn or sorghum. East of a line running north and south through Ellis, Sudan grass will yield fully as well if sown broadcast or with an ordinary grain drill as when planted in rows and cultivated.

SURFACE PLANTING SUCCESSFUL

"Better stands usually are obtained from surface planting than from listing because often the furrows are filled up by dashing rains or wind storms, and the seed buried so deeply that the seedlings can not come through.

"In planting on the surface the ground must be plowed previously and put into good condition with a drag harrow, after which the seed can be planted with an ordinary corn planter or with a grain drill by stopping up the number of feeds so that the distance between drills will be sufficient for the implements of cultivation. It is easier to regulate the amount of seed in a drill than in a corn planter, and a drill is most often used in the experiment station work."

MUST KEEP AT BUSINESS OF RAISING PUREBREDS

Stockman Can't Engage in this Line One Year and Give It Up Next, Says Tomson

Raising purebred cattle is not a business that can be engaged in one year and closed out the next, asserted Frank D. Tomson, editor of the Shorthorn in America, in an address before the Kansas Improved Stock Breeders' association at the agricultural college Farm and Home week.

"The business of raising purebred stock," said Mr. Tomson, "requires a steady, continuous, persistent application of thought and purpose. And for this reason the farmers in the

British Isles have attained a degree of success that we have scarcely reached in this country.

"The making of a pedigree means an intelligent selection and mating of types. This involves some knowledge of the preceding ancestry. For instance, one would hardly expect a breeder to produce cattle that would reproduce accurately if he used a small, fine boned, smoothly finished sire for one cross and then followed it by an oversized sire of uneven conformation and heavy bone, and continued this plan. The offspring would lack uniformity and could not be relied upon to reproduce type.

"The correct method would be for the breeder to form in his mind the conformation, the type, that he wished to perpetuate and then select his sires as nearly of this type as possible. Having done this, the pedigree would be strengthened with each cross and the offspring would much more certainly reproduce the type desired.

"Let us suppose that a breeder has followed this plan and then, through lack of judgment, or for some unaccountable reason, permitted the use of a sire widely differing from his established type. In so doing he has destroyed the results of years. Now let us suppose that an inferior sire, representing indifferent blood lines is placed in service. We can scarcely estimate the damage resulting.

"Nothing that one can do as a cattle breeder will strengthen his position at the market so much as to furnish steers that are purebred or at least that have four or five purebred tops. So let the improved animal, the registered animal, be the basis for the breeding operations. This is vastly more important now than in the early days when the improved animal did not appear at the market in considerable numbers.

"Competition is keen today in this field and the man who attempts to make a success of raising inferior cattle on the assumption that they are profitable will find himself severely handicapped because cattle of the improved type go to market in large numbers and are given the preference by the buyers."

AFFIRMATIVE WINS IN BOTH ENDS OF DEBATE

College Girls Arguing for One House Legislature Are Victorious Here and at Ottawa

The dual debate with Ottawa university last Friday night resulted in a victory for the visiting teams in each case. The winners took the affirmative side in arguing the question of the unicameral legislature.

The team that went to Ottawa was composed of Miss Blanche Sappenfield of Clifton, Miss Marie Johnson of Manhattan, and Miss Louise Ziller of Manhattan. The negative team, which remained at home, was made up of Miss Ethel Arnold of Manhattan, Miss Lola Sloop of Boyle, and Miss Margaret King of Manhattan.

WEIGHT WITH QUALITY IS ESSENTIAL OF WORK HORSE

Heavy Demand But Small Supply of Big, Sound Animals

Weight combined with quality is the prime essential in determining the value of a work horse, in the opinion of Dr. C. W. McCampbell, associate professor of animal husbandry in the Kansas State Agricultural college.

"Today the demand is the greatest and the supply the smallest for the big, sound, smooth, well made, easy going horse with substance and quality," said Doctor McCampbell. "Such horses can be produced only by breeding the best farm mares to the best pure bred draft stallions. Then the colt from this mating must be liberally fed from the time he begins to eat until maturity."

Prices for work horses of different weights have ranged on the Chicago market during the last year approximately as follows: 1,300 to 1,400 pound horses, \$150 to \$185; 1,400 to 1,500 pound horses, \$185 to \$215; 1,500 to 1,600 pound horses, \$215 to \$250; 1,600 pounds or more, \$250 to \$500.

GRASS LANDS NEED CARE

PASTURE MANAGEMENT IMPORTANT IN SUCCESSFUL KANSAS FARMING

Immediate Results of Burning Over Fields Are Good, but Ultimate Effect on Stand Will Be Bad, Says Crop Specialist

Kansas farmers should pay more attention to pasture management in order to realize fair interest on the valuation of their property, in the opinion of Ralph Kenney, assistant professor of crops in the Kansas State Agricultural college.

"Kansas is known far and wide for her tremendous crops of wheat and equally valuable crops of corn," said Professor Kenney, "but few persons realize that the grass lands of the state cover an area almost twice as great as the annual acreage of winter wheat and corn combined and represent a total value of approximately \$500,000,000.

A PRACTICE WIDELY FOLLOWED

"Many farmers follow the practice of burning over their pastures early in the spring in order to get rid of the dead, coarse unpalatable grass stalks left over from the previous year's grazing. They have found by experience that cattle do better early in the grazing season upon pastures so treated. The young, tender, succulent plants make more rapid growth and cattle find them more accessible than when mixed with the dry growth left.

"While better results in pasturing are obtainable early in the season on burned over fields, the ultimate effect upon the stand of grass, and especially of the choice forage stand, is bound to be bad. The burning cannot help destroying the crowns of many of the plants, and also much of the seed that might have been dropped the previous year, as well as any plantlets just starting. A part of this damage is overcome, however, by burning before the crowns and the soil have become thoroughly dry, thus preventing close burning.

WEEDS CAN BE CONTROLLED

"The early growth of grass left without any protection from the previous year's crops, together with early grazing while the soil is damp, provides ideal conditions for the weakening of many plants and the total elimination of the choicest, tenderest of them sooner or later under the burning system of pasture land management."

Some work has been done in mowing to control weed growth, pointed out Professor Kenney. Results to date indicate that weeds can be effectively controlled, especially on the level areas where weeds are growing to the exclusion of all forage plants. Where the grass stand is good and weeds are few, mowing has been detrimental to the growth of grass even when cut as late as August 15.

AGGIES NOW IN SECOND PLACE IN BASKETBALL

Missouri Stands First in Valley Percentage Column—Games with Nebraska This Week

By taking both ends of a two-game series with Washington university last Friday and Saturday nights by decisive scores—34 to 17 and 46 to 17 respectively—Kansas State Agricultural college went into second place in the Missouri valley basketball percentage column. Missouri is first with six games won and two lost.

Hard fought contests are anticipated in Nichols gymnasium tonight and Thursday night with the Cornhuskers. These games will give an excellent line on the relative strength of Missouri, as the Tigers took a series from Nebraska.

Following is the standing of the Missouri valley teams:

	W.	L.	Pct.
Missouri.....	6	2	.750
Aggies.....	4	2	.667
Kansas University.....	5	3	.625
Ames.....	2	3	.400
Nebraska.....	0	2	.000
Drake.....	0	1	.000
Washington.....	0	4	.000

YES, FARM AND HOME WEEK PLEASED ALL THE VISITORS

FARMERS AND THEIR WIVES, TEACHERS AND THEIR PUPILS,
WENT HOME PLEASED WITH PROGRAM AND
VIEW OF THE COLLEGE

Farm and Home week pleased the visitors, and they weren't afraid to say so. Farmers, farmers' wives, boys and girls, school teachers—all felt they had got a lot from the meetings and the opportunity to see the college at work.

Here are a few of the comments made to the students of industrial journalism who went about among the visitors:

Mrs. F. H. Hull, farmer's wife, in charge of the girls from Ionia club, Jewell county: "This trip has been worth a great deal to us. We have enjoyed the lectures and demonstrations. We were particularly interested in the home lighting problems."

Mrs. E. L. Marshall, farmer's wife and member of the Glenwood Mother-Daughter Canning club, Leavenworth county: "I have received much benefit from this trip to Manhattan. I wish I could have seen more."

COUNTY SUPERINTENDENTS SPEAK

Miss Edith Miller, county superintendent, Gray county: "Boys and girls gain inspiration, ambition, and enthusiasm from a trip like this."

Miss E. Nevens, county superintendent, Ford county: "The children not only gain inspiration through attending farm and home week, but are given an incentive to attend college."

"Mrs. Alice G. Streeter, farmer's wife, Denton: "My only regret is that I could not attend all the meetings. I expect to send my daughter to this college."

CAME FROM NORTH DAKOTA

George E. Farrel, assistant in charge of boys' and girls' clubs of the United States, Washington, D. C.: "I came all the way from Fargo, N. D., to see the Glenwood canning exhibit. I have not yet seen any exhibit in the United States equal to this."

G. C. Larson, stock raiser, Lincoln: "The most remarkable thing about Farm and Home week is the efficient manner in which the large crowd was handled."

Guy T. Gebhardt, Marion: "The students do not appreciate how much Farm and Home week means to the residents of Kansas and how much good is derived from it."

AN EDUCATION TO KANSAS

D. A. Kramer, Washington: "Farm and Home week is an education to the men and women of Kansas."

Ambrose D. Folker, county agent, Jewell county, Mankato: "No one can really estimate or measure the value of this great week's work. The state is performing a valuable service, the result of which is not measured in dollars and cents alone but also by the development of greater manhood and womanhood and a better citizenship."

Dan Casement, ranchman, Manhattan: "Farm and Home week is a successful undertaking and I appreciate the work the college is doing along this line to aid the farmer."

COMMENTS COLLEGE SALE

A. H. Taylor, farmer, Sedgwick: "The sale which was held this week was a good thing for the smaller farmer who does not get the publicity that a large stock dealer receives. By this sale's method a man can place on the market any number of animals he may have for sale, and he is benefited because of the fact that the sale is held at the college."

E. L. Miller, farmer, Kansas City, Mo.: "I have been impressed by the courtesy shown the visitors this week. I am an apple grower and think that the meeting has been of great benefit to apple growers in general. The large fruit associations do not seem to reach the small fruit grower as the college has this week."

Lawrence Miller, student, Rolla, Mo.: "I came here this week to investigate the department of horticulture. I like it so well that I have decided to enter the course next fall."

PRACTICAL FOR THE FARMER

F. J. Moll, farmer, Clay Center: "It is well worth one's time to attend Farm and Home week. A great deal can be learned which is of practical value to the farmer."

A. T. Cleveland, farmer, Milford: "Farm and Home week is a good idea."

H. A. Sabe, cattleman, Phillipsburg: "I can hardly say too much in its favor."

J. J. Richards, stockman, Parkerville: "It is a great benefit to Kansas farmers."

PROGRAM ATTRACTIVE TO WOMEN

Mrs. Ed Staadt, Paola: "I have been well pleased with the Farm and Home week program this year. I am glad to see a good representation of women."

Reynold Shuyler, '10, Bethel: "A fellow gets stale working on the farm the year around. These Farm and Home week lectures and demonstrations make one want to try something new on the farm."

Mrs. A. D. Johnson, Randolph: "I am being entertained as well as instructed this week."

ENJOYED SEEING STUDENTS

Mrs. A. N. Dunlap, Carlyle: "Everything about this college is so convenient for the students. I enjoy seeing them at work."

Seward H. Baker, president Chase county farm bureau: "There has been a wonderful change at the college since I last visited it 17 years ago. It is well worth anybody's time to attend Farm and Home week, and one who does not do so misses a great deal."

M. H. Markham, secretary Cowley farm bureau: "This is great! It is my first visit but it will not be my last."

J. C. Delaney, president farm bureau, Cowley county: "My time is valuable at home but not valuable in comparison with the time spent here."

FROM EDITOR AND LAWYER

R. P. McColloch, editor and attorney, Anthony: "I do not know of anything that has appealed to me so strongly as this educational week for farmers. It is a liberal education for those interested in agriculture, and I think every farmer in Kansas should endeavor to bring his wife and spend the week."

Albert Robinson, high school graduate, Lowmont: "I got a lot of good from lectures and exhibits at Farm and Home week. I like the agricultural college, and if I ever have a chance to attend college I think I shall come here."

WORTH \$100 TO HIM

Charles H. Glover, Belle Plaine: "This trip has been worth \$100 to me."

L. Tillotson, stockman, Silver Lake: "I have seen many things similar but I can say I have never seen anything grander."

L. J. Cochran, stockman: "I can't get around to see everything."

Mrs. Eliza Blaylock, Smith Center: "The Farm and Home week visit while the college is in session is a fine incentive to the high school boys."

H. K. Stagg, farmer, Manhattan: "All of it is well worth while."

BOY LIKED IT ALL

Franklin Hall, school boy, Cimarron: "I am having lots of fun and like it all."

J. R. Alberts, farmer and stockman, Glen Elder: "I have attended many horse sales but very few surpass this one in quality."

M. G. Bigham, stockman, Ozawie: "The college is an ideal place for a horse sale. The horses are of good quality and much praise is due Doctor McCampbell as manager of the sale."

R. A. Ewing, farmer, Iola: "The program has been splendid. I regret that I could not hear it all."

PROGRAM WAS SPLENDID

R. C. Obrecht, dairy farmer, Topeka: "It is a splendid program. I am interested in all of it but of course particularly so in the dairy work."

W. D. Clayton, farm machinist, Hill City: "The program is a strong one, being well presented and organized."

E. P. Pendleton, stockman, Princeton: "The students seem anxious to assist the visitors in every way. Each student wears the look of business on his face. They all look as though they were here for business and because of personal desire for a particular education. I think that the meetings are a fine thing for the farmers of the state."

F. J. Burk, dairyman, Holton: "Farm and Home week certainly has been a success."

INTERESTED IN SHOP WORK

Dan C. Holmes, Rozel: "I have enjoyed the Farm and Home week, having been especially interested in the shop work, blacksmithing, and stock judging."

H. L. Popenoe, county agent, Lyon county: "We are here in force and are having a great time."

J. W. Hickling, stockman, Lyon county: "I didn't realize there was so much to see. Its great."

GREAT THING FOR EVERYBODY

M. E. Mack, farmer, Osborne: "I think it is a great thing for everybody who attends. It is going to create in the younger folks an interest that they have never had before."

Harry Payton, member gardening and canning club, Scott City: "It is well worth while."

Chalmers Waller, winner county corn club, Atchison: "It's fine!"

Mrs. H. A. Fowler, Manhattan: "Grandest for at least nine years. I believe the people over the state will be more interested in the college."

COMING TO COLLEGE HERE

Alice Agerman, aged 15 years, Kinsley: "I like this college and I'm coming here when I get through high school and I'm coming here to Farm and Home week every year until I get through high school."

Anna Bugbee, 16 years old, Emporia: "Farm and Home week is fine. I'm coming back again."

Howard Bailes, 12 years old, Vesper: "I'm havin' lots of sport and learnin' something, too."

HAS CHANGED FOR BETTER

H. F. Carhl, Shawnee, student in the agricultural college in 1872: "Things have surely changed since I was here in '72, but it's all a change for the better. I'm coming back every year to Farm and Home week, it reminds me of my college days."

William Knouse, farmer, Horton: "Farm and Home week brings many people here that would otherwise never see how their money is being spent."

F. E. Hunter, stockman, Newton: "I think Farm and Home week is a grand thing. I never knew before that the college had such fine stock. I am going to have my boy come the next time."

HE IS COMING AGAIN

Otto Heshner, stockman and farmer, Gypsum City: "The state certainly has some fine buildings here. This is my first time here but I am coming again."

J. K. Freed, farmer, Scott City: "The Farm and Home week has a tendency to make the farmer see the bigger and better things of life. It helps to keep the boys on the farm because they see the better ways of living."

T. P. Teagarden, farmer, Wayne: "Farm and Home week is a good time to get the high school boys and girls interested in the work of the college. It also creates a new interest in the farm work."

IN SPECIAL FARM FIELDS

MANY ASSOCIATIONS HOLD ANNUAL MEETINGS AT COLLEGE

Speakers from Other States and Kansas Specialists Give Practical Addresses and Demonstrations—Officers Elected at Business Sessions

Annual meetings of Kansas agricultural and stock breeders' associations held last week at the Kansas State Agricultural college were attended by hundreds of persons from all sections of the state. These meetings will be a permanent feature of Farm and Home week.

H. N. Vinall, office of forage crops, United States department of agriculture, and W. W. Burr, professor of agronomy, Nebraska Agricultural college, were well known speakers on the program of the meeting of the Kansas Crop Improvement association. Practical papers were read and demonstrations given by local agricultural college specialists.

Officers elected follow: president, Carl Wheeler, Bridgeport; vice-president, J. J. Johnson, Eldorado; secretary-treasurer, B. S. Wilson, Manhattan. Members of the board of directors are: L. E. Call, Manhattan; Harry Umberger, Manhattan; John Brox, Atchison; R. A. Muir, Salina; and L. C. Swihart, Lovewell.

COMMEND DAIRY DEPARTMENT

Demonstrations were a feature of the meeting of the Kansas State Dairy association. William Newlin of Hutchinson was elected president; George Lenhart of Abilene, vice-president; and J. B. Fitch of Manhattan, secretary-treasurer.

Resolutions were passed commending the efficient work of the dairy husbandry department of the agricultural college in experimental work and in establishing cow testing associations.

F. R. Marshall, in charge of sheep investigation, United States department of agriculture, was a speaker at the meeting of the Kansas Sheep Breeders' association. A. L. Stockwell of Laredo was elected president; Henry Schloh of Natoma, vice-president; and A. M. Paterson of Manhattan, secretary-treasurer.

IOWA MAN DISCUSSES SWINE

John M. Evvard, assistant chief in animal husbandry, Iowa State college, Ames, discussed feeding and other problems at the annual meeting of the Kansas Swine Breeders' association. Fred Laptad of Lawrence is the new president and Carl P. Thompson of Manhattan is secretary-treasurer.

Vice-presidents and the respective breeds of swine they raise follow: H. P. Walters, Effingham, Poland China; George M. Klussmier, Holton, Duroc Jersey; George Porteous, Lawrence, Berkshire; J. E. Powell, Waldron, Hampshire; Arthur Mosse, Leavenworth, Chester White.

Frank D. Tomson, editor of the Shorthorn in America, was one of the speakers at the meeting of the Kansas Improved Stock Breeders' association.

TOMSON AGAIN HEADS BREEDERS

James Tomson of Topeka was re-elected president. The new vice-president is Edward Nicholson of Leonardville, and the secretary-treasurer, George W. Berry of Topeka. Executive committee: Dan Casement, Manhattan; C. W. Taylor, Abilene; Miss Louise Krigbaum, Topeka; Col. J. F. True, Topeka; and W. A. Cochel, Manhattan.

Dr. Warren H. Wilson of New York, Frank B. Graham of Kansas City, John D. Snyder of Hutchinson, and W. A. Cochel, professor of animal husbandry in the agricultural college, were speakers at the meeting of the Kansas Horse Breeders' association Saturday. The officers were re-elected. The president is George B. Ross of Sterling and the secretary-treasurer Dr. C. W. McCampbell of Manhattan.

MATURE HENS PREFERABLE TO PULLETS, SAYS POULTRYMAN

What Points to Watch for in Selection for Breeding Purposes

Select mature hens, and not pullets, for breeding purposes, advises F. E. Fox, assistant in poultry husbandry

in the Kansas State Agricultural college.

"Constitutional vigor should be the first consideration in the selection of a hen," said Mr. Fox. "The head should be broad, wide, and deep; the eyes full, round, and prominent; the beak short and stout; and the neck of medium length."

"Individuals should be selected that have well proportioned backs, broad at the rear extremity. The birds should have broad, deep breasts with long keels, which should extend well to the rear. The body should have plenty of capacity to allow room for the digestive and reproductive organs. Another indication of vigor is the well worn or blunt toenail."

"Select only active, vigorous hens. A good rule for this is the old saying, 'The best hen is the first off the roost in the morning and the last on in the evening.' Avoid the use of immature pullets. If pullets must be used mate these birds to cocks and not cockerels."

CRAZY QUILT NO MODEL FOR A TASTEFUL HOME

Color Produces Real Effect on People's Feelings, and Combinations Should Be Harmonious

That color is a force—a language—and has a psychological effect upon people, is the opinion of Miss Araminta Holman, instructor in home art in the agricultural college. A house needn't look like a crazy quilt in order to impress guests.

"As color varies in value, hue, and intensity, it excites different thoughts and feelings," said Miss Holman. "Different colors suggest definite feelings. Blue is cold, formal, and distant; green, cool and restful; yellow, cheerful, brilliant, and unifying; red, warm, rich, and aggressive; orange, hot, striking, and decorative; violet, mournful, mystic, and darkening."

"The color combinations used in homes reflect personality and character, and the occupants or visitors unconsciously respond to the effect color has upon them. Colors in their full intensity are strong, loud, and vital. Colors that have been neutralized express refinement and charm. Light tones express youth, gayety, and informality. Dark color tones express strength, dignity, repose, and seriousness."

There seems to be prevalent a general idea, points out Miss Holman, that in order to have a well decorated home a variety of color schemes must be used. As soon as one opens the front door of some houses, he receives a crazy-quilt impression. There is a variety of colors throughout the house as well as in each room. The carpet or rug is one color, the wall paper another, and the furniture another.

In other homes there is at once a feeling of quietness and rest, of unity and wholeness. Different colors cut up a house into different parts and the occupants must adjust themselves continually to fit into each room.

EVERGREEN HEDGE FENCE TO STOP SOIL BLOWING

Austrian and Western Yellow Pine and Chinese Arbor Vitae Are Desirable

That hedge fences are effective in the prevention of soil blowing and should be set out by the farmers in sections of the state where damage is done through this cause, is the opinion of C. A. Scott, state forester.

"Evergreen hedges are best," points out Professor Scott. "They present a good appearance throughout the entire year, and cut off the wind from the surface of the field where the most damage is done through soil blowing. Good varieties to set out are red cedar, Austrian pine, western yellow pine, and Chinese arbor vitae."

"If ordinary osage orange hedge is already set out, do not cut it down. The soil nearest the hedge will not yield a profitable crop of grain but a strip of alfalfa two rods wide may be planted along the side of the hedge. The alfalfa will yield a good crop as it is not harmed by partial shade. The hedge will act as a windbreak and all the ground will be profitably utilized."